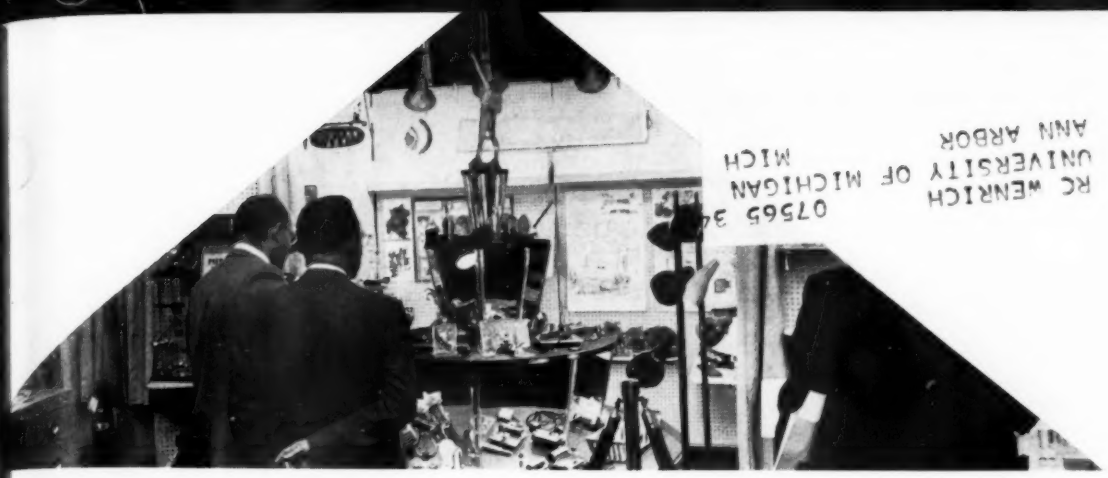

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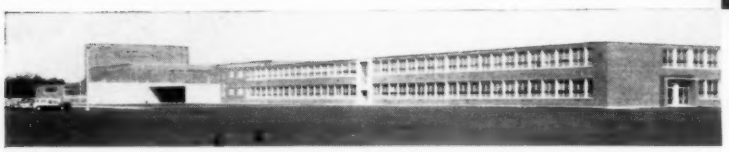
ANNUAL TRADE SHOW ISSUE 1961

NOVEMBER 1961

"...South Bend Lathes
have proven their dependability"



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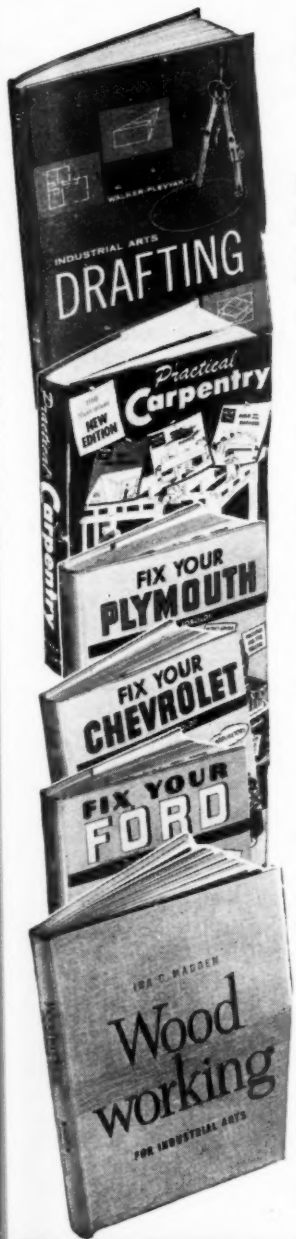

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● One of the principal goals of the Public Information Committee in the years ahead is to reinforce *Public Awareness of Vocational Education.* Despite the many fine examples of public information programs now in existence throughout the Nation our "Public" is entirely too small. It will not be possible to build vocational programs in tune with national need unless all of the States step up their public information activities and adopt emergency measures to cause their publics to grow large.

A sub-committee of the Public Information Committee met in Kansas City on Oct. 11 and 12 to study the critical problem of the need for public information in vocational education. The sub-committee included the following persons: Dr. M. L. Barlow, PIC Chairman; Dr. M. D. Mobley, Dr. Bill Logan; Dr. H. H. London, Dr. Jarred Lindsey, Dr. H. M. Hamlin, Mrs. Rosa Loving and Lowell Burkett. The sub-committee considered how PIC could provide the best possible assistance to create the nation-wide *Public Awareness of Vocational Education.*

On Dec. 2 and 3, the Public Information Committee in a pre-convention meeting in Kansas City will hold an intensive workshop concerning the *Public Awareness of Vocational Education* programs and will consult with a large number of vocational education leaders.

Every member of AVA can participate actively in the PAVE program through their State Associations and can help build a better nation through vocational education. The public image of vocational education must emphasize the enduring principles of vocational education and the adaptation of these principles to the changing occupational world. During the next two years the work of the President's Panel of Consultants on Vocational Education *(see page 4)* will provide many opportunities for the public at large to learn of the program of vocational education. PAVE can become the vehicle through which this public in every community of the nation can have an opportunity to actually see this program in operation.

A special PAVE program for officers of AVA affiliated organizations is planned on Dec. 6, at the Kansas City convention. Participation in PAVE is logically a professional responsibility of members of State Associations. Representatives of PIC will consult with State Association officers and will plan cooperatively to secure gains toward the task of the hour—*Public Awareness of Vocational Education.*

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american
VOCATIONAL journal

VOLUME 36, NUMBER 8 NOVEMBER 1961

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COVER: The cover photos give you a peek at typical exhibits which will be displayed at the AVA 55th Annual Convention next month in Kansas City, Mo. More than 100 booths will provide one of the major education attractions of the convention. For the list of firms which will present their products and services, see pages 32 and 33.

latest word from WASHINGTON

This issue of the JOURNAL features the exhibits for the 1961 AVA Convention to be held in Kansas City, Dec. 4-8. See page 32 for a complete list of exhibitors as we go to press. Each year exhibits at annual conventions comprise one of the major educational attractions. This year will be no exception. Everyone in attendance is given a full half day during the convention to visit exhibits. This gives everyone present an opportunity to see the latest teaching aids, equipment, textbooks, and supplies available for carrying on sound, effective programs in vocational and practical arts education.

We hope that everyone who attends the convention will visit the exhibits and express appreciation to the exhibitors for having their goods on display. Without the full support of the exhibitors, annual vocational conventions would not be possible. Be sure to visit every exhibit, get your exhibit card punched and thus be eligible for the many valuable prizes that will be distributed at the SHIP Program at 1:30 p.m., Friday, Dec. 8.

It appears that we will again have an outstanding vocational convention. We hope to see many old friends and to make new friends who will be attending their first convention. We anticipate between 3,000 and 4,000 will be present.

PANEL OF CONSULTANTS. On Oct. 5, President Kennedy announced the appointment of a "PANEL OF CONSULTANTS" to the Secretary of Health, Education and Welfare to review and evaluate vocational education and to "make recommendations for improving and re-directing the program."

Following is an exact copy of the release from The White House on Oct. 5:

"THE WHITE HOUSE

"The President today announced the appointment of a panel of consultants to the Secretary of Health, Education and Welfare to review and evaluate the National Vocational Education Act and make recommendations for improving and re-directing the program.

"This panel, which will consist of 25 members drawn from labor, industry, agriculture, education, Government, and the general public, was named by Secretary Ribicoff at the request of the President. It is expected that its recommendations will be placed before the Congress in January 1963.

"The Chairman of the panel will be Benjamin C. Willis, Superintendent of Schools, Chicago, Illinois. The other members of the panel are:

CHARLES W. ENGELHARD, JR., Chairman of the Board, Engelhard Industries, Newark, New Jersey.

FREDERICK T. CORLETO, Corleto Buick Agency, Inc., South Philadelphia, Pa.

DAEL WOLFLE, Executive Officer, American Association for the Advancement of Science, Washington, D.C.

PETER T. SCHOEMANN, President, United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry, Washington, D.C.

FRANCIS A. GREGORY, Assistant Superintendent and Director of Vocational Education, District of Columbia Schools, Washington, D.C.

CHARLES O'DELL, Assistant Director of Retired Workers' Department of the International Union of the United Auto Workers, Detroit, Michigan.

THEODORE SCHULTZ, Chairman, Department of Economics, University of Chicago, Chicago, Illinois.

WILLIAM B. LOGAN, Director of Distributive Education and Professor of Education, Ohio State University, Columbus, Ohio.

CHARLES F.CARROLL, Superintendent of Public Instruction, State Department of Public Instruction, Raleigh, North Carolina.

FLOYD D. JOHNSON, Teacher of Vocational Agriculture, York, South Carolina.

THOMAS H. QUIGLEY, Professor and Head, Department of Trade and Industrial Education, Engineering Extension Division, Georgia Institute of Technology, Atlanta, Georgia.

MRS. MARY CAPERTON BINGHAM, Louisville, Kentucky.

EDWARD B. EVANS, President, Prairie View Agricultural and Mechanical College.

J. B. PERKY, Director of Vocational Education, State Department of Education, Stillwater, Oklahoma.

HENRY A. GONZALES, State Supervisor of Trade and Industrial Education, Santa Fe, New Mexico.

JAMES PATTON, President, National Farmers Union, Denver, Colorado.

ERNEST H. DEAN, Speaker of the House of Representatives of the State of Utah, Salt Lake City, Utah.

MRS. HELEN RADKE, Member of Port Angeles Public School Board, Port Angeles, Washington.

PAUL SHEATS, Director of Extension and Adult Education, University of California, Los Angeles, California.

MARK ELLINGSON, President, Rochester Institute of Technology, Rochester, N.Y.

MARGARET C. ELLS, American International College, Springfield, Mass.

E. T. YORK, Director of Federal Extension Service, Department of Agriculture, Washington, D.C.

JERRY R. HOLLEMAN, Assistant Secretary of Labor, Washington, D.C.

HYMAN H. BOOKBINDER, Special Assistant to the Secretary of Commerce, Washington, D.C."

This "PANEL OF CONSULTANTS" includes eight vocational educators who are: Francis A. Gregory, Henry A. Gonzales, J. B. Perky, William B. Logan (1961 President of AVA), Thomas H. Quigley (1938 President of AVA), Ernest H. Dean (In addition to being Speaker of the House of Representatives in Utah, he is a member of the state vocational staff), Margaret C. Ells (Former Assistant Principal in charge of the Girls Division of the Springfield Trade High School in Massachusetts), Floyd D. Johnson (President of the National Association of Vocational Agriculture Teachers).

Mrs. Helen Radke is a member of tne Washington State Board of Education which is also the State Board for Vocational Education. Peter T. Schoemann at one time was President of the State Board of Vocational and Adult Education for Wisconsin.

Plans are underway for the first meeting of the "PANEL OF CONSULTANTS" which will be held in Washington on November 9, 10 and 11.

HOME ECONOMICS REPRESENTATIVE. Since the issuance of the White House release on Oct. 5, the PANEL OF CONSULTANTS has been expanded to 26 members with the addition of Dr. Helen R. Le Baron, Dean of the College of Home Economics, Iowa State University, Ames, Iowa—and former State Supervisor of Home Economics in Vermont.

Dr. J. Chester Swanson has been named Director of the Staff that will serve the "PANEL OF CONSULTANTS". Dr. Swanson is presently at the University of California in Berkley. In the early '40s, he served for several years on the vocational staff of the U.S. Office of Education. Prior to accepting a position at the University of California, he served as Superintendent of Schools in Oklahoma City, and developed a splendid program of vocational education. From what we can learn, he is well qualified to serve as Staff Director.

MISS MARY ALLEN, Secretary to Representative Carl Elliott (Co-author of the NDEA) of Alabama, a devoted worker in the field of education, is to be a member of the staff. Dr. Noel T. Myers, formerly a local director of vocational education in Indiana and presently with the ICA, will also be a member of the Staff serving the PANEL OF CONSULTANTS. Dr. Duane M. Nielson, Specialist, Research and Teacher Training, Vocational Education Division, Agricultural Education Branch, U.S. Office of Education, will serve as the liaison officer between the Vocational Division of the Office of Education and the Staff of the PANEL OF CONSULTANTS. This will provide a continuous tie between the official Staff of the Office of Education and the Staff of the PANEL OF CONSULTANTS.

You will note from the President's announcement that the PANEL OF CONSULTANTS will be expected to complete its recommendations on or before National Congress convenes in 1963.

The full scope of activities of the PANEL OF CONSULTANTS will not be made known until after they have held one or more meetings. Your AVA office will cooperate wholeheartedly with the PANEL and be of every service possible to its members in supplying factual information that may be requested.

It is our opinion that the appointment of the PANEL OF CONSULTANTS is the most important step that has been taken in many years to promote the further development and improvement of Vocational Education throughout the nation. We anticipate that the work of this PANEL will compare favorably with the efforts of the National Commission for Vocational Education that was established in 1914 under the leadership of the late President Woodrow Wilson. All vocational personnel — local, state, and federal — throughout the nation should stand ready to cooperate and work wholeheartedly with this PANEL.

Sincerely yours,

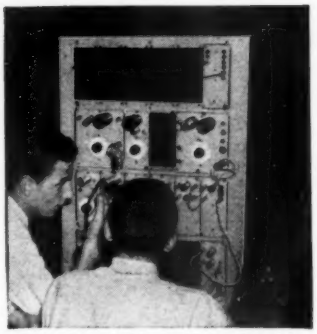
M. D. Mobley

M. D. Mobley
Editor-in-Chief and
AVA Executive Secretary

Registration Schedule for AVA's 55th Annual Convention

AVA members attending the convention in Kansas City can register at the times and places listed below.

Muehlebach Hotel		Municipal Auditorium	
Friday, December 1	10 a.m. to 2 p.m.	Tuesday, December 5	8 a.m. to 5 p.m.
Saturday, December 2	8 a.m. to 4 p.m.	Wednesday, December 6	8 a.m. to 5 p.m.
Sunday, December 3	Noon to 6 p.m.	Thursday, December 7	8 a.m. to 4 p.m.
Monday, December 4	8 a.m. to 5 p.m.	Friday, December 8	8 a.m. to noon



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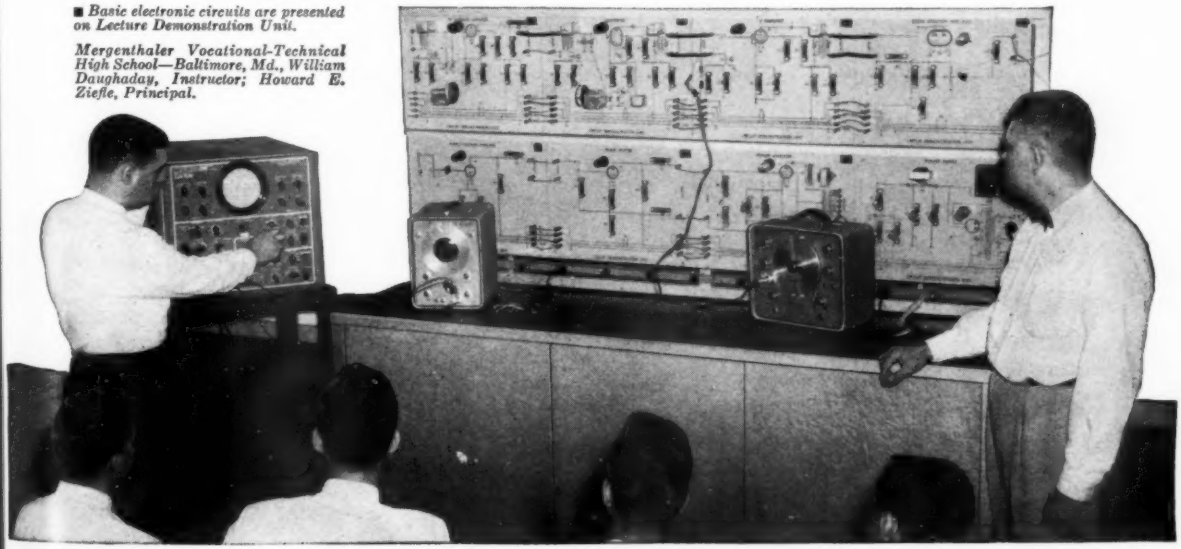

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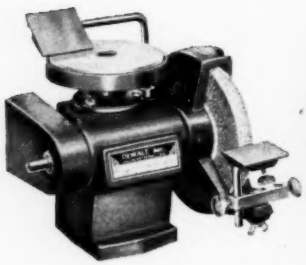

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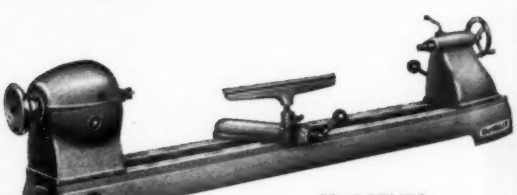

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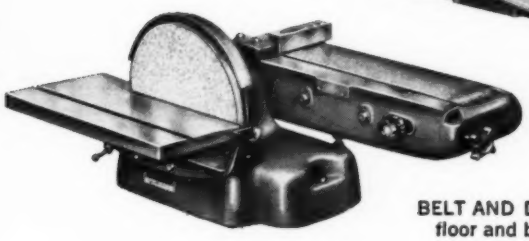

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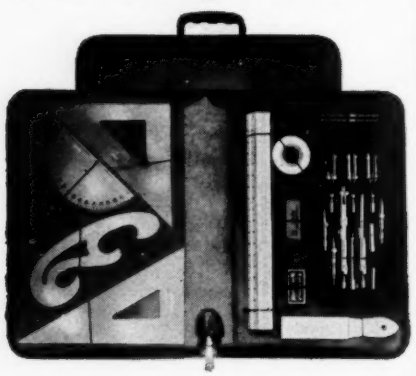

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Here and There

Education Week

President John F. Kennedy has proclaimed Nov. 5-11 American Education Week, urging that "we honor our teachers and school officials, for whom every week is education week."

"The education of our people should be a lifelong process by which we continue to feed new vigor into the lifestream of the Nation through intelligent, reasoned decisions," the President said.

"Let us not think of education only in terms of its costs, but rather in terms of the infinite potential of the human mind that can be realized through education. Let us think of education as the means of developing our greatest abilities, because in each of us there is a private hope and dream which, fulfilled, can be translated into benefit for everyone and greater strength for our Nation."

Hamlin Heads Department

The forces in vocational and practical arts education at the University of Illinois have been consolidated by the formation, on a trial basis for one year, of a Department of Vocational and Practical Arts Education within the College of Education. The Department brings together the Divisions of Agricultural Education, Home Economics Education, and Industrial Education. Business education is shared by the Colleges of Commerce and Education, but the staff in Business Education shares in the staff meetings of the new department. H. M. Hamlin is Chairman of the Department. Each division within the Department has a chairman and a staff.

AVA Appoints Judges

The September issue of the JOURNAL announced the contest sponsored by AVA to secure an outstanding design for a seal or emblem. A number of designs have been submitted. There are still a few days left to get your design turned in to the AVA office by the Nov. 10 deadline. Hurry! Hurry! We need your ideas! The winning design will mean an AVA Life Membership ($150.00) to its originator.

Following are the judges appointed by the AVA Executive Committee to select the winning design. They are drawn from each field of service having an AVA vice president. Each judge has been an AVA president.

E. M. Claude, Assistant Director of Vocational Education, Springfield, Ill., will serve as chairman. The other judges are: Mrs. Eva W. Scully, State Supervisor of Home Economics Education, Phoenix, Ariz.; Cecil E. Stanley, Assistant Commissioner for Vocational Education, Lincoln, Neb.; H. H. London, Professor of Industrial Education, University of Missouri, Columbia, Mo., and Mark Nichols, State Director for Vocational Education, Salt Lake City, Utah.

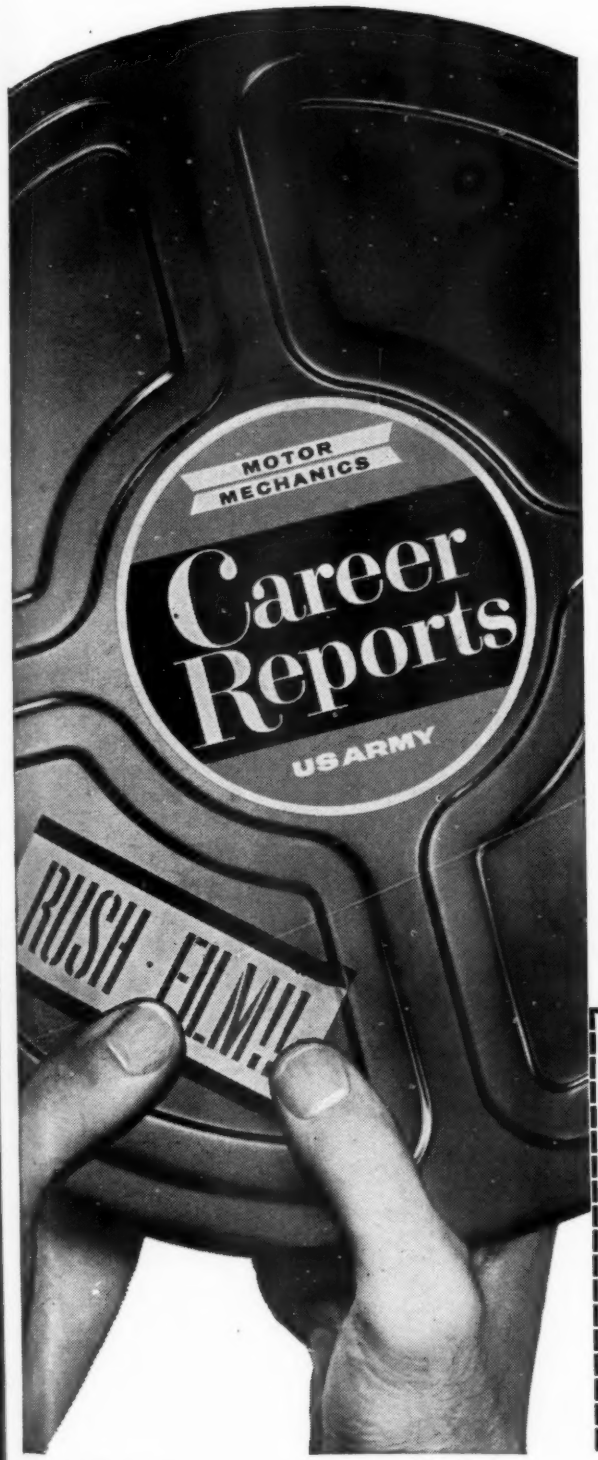
Direct Vocational Survey

A survey to determine the vocational-technical-trade education needs in Suffolk County, N. Y., has been undertaken by the county's Board of Cooperative Educational Services. Robert T. Stoner and George E. McLaughlin, survey specialists, have been employed to make the survey. Mr. Stoner recently retired as State Director of Vocational Education in the Pennsylvania Department of Public Instruction after 32 years in public education. Mr. McLaughlin has just retired from the superintendency of the New York Trade School where he was located 25 years.

National Meeting Called

A four-day national work conference on technical teacher education will be conducted this month in Washington, D. C., by the U. S. Office of Education's Vocational Education Branch. The participants at the conference, which follows up seven subregional meetings held recently in different parts of the country, will consider qualifications essential for successful technical teaching. They will determine professional teacher education course content and design a suggested technical teacher education curriculum. They will also recommend procedures for the preparation of technical teachers. The conference findings will be made available to the States for use in developing technical teacher education programs, according to the Office's announcement.

To help you guide the seniors who don't go on to college



A new solution to a serious guidance problem. The secret of getting ahead is planning ahead. For seniors in search of a career, it's essential to know the pros and cons of an occupation before selecting it. But until now, visual guidance materials have been sorely lacking to help you counsel one large category of young men—the seniors who aren't able to go on to college. Career Reports is a new series of motion pictures created to fill this serious gap in the average vocational guidance program.

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Who sponsors this project? Career Reports is sponsored by the Department of the Army, with cooperation from the American Personnel and Guidance Association, and other recognized vocational authorities.

What is the Army's purpose? Each film in the series conveys a distinct axiom: training is indispensable to success in any skilled occupation. Beginners can acquire this training in one of several ways—on the job (by means of formal or informal apprenticeship), through a trade school or company training program, or in the Armed Services. The Army's purpose is achieved simply by being recognized as one of the possible ways in which a young man can secure essential vocational training.

An early reservation is advisable. For the first time, a comprehensive guidance tool has been prepared specifically for high school graduates not able to go on to college. The Career Reports series is available (without charge) to teachers and guidance counselors in the United States. Reservations must be made early in order to incorporate Career Reports into your guidance program for the coming academic year. May we therefore suggest that you mail the coupon today for free details.

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Junior Colleges Meet Technical Training Need

The function of the junior college in providing technical education was discussed at the Eighth Annual Colorado Junior College Conference recently at Trinidad, Colo.

Maurice W. Roney, Program Specialist, Area Vocational Education Branch, U. S. Office of Education, explained criteria developed by his branch to identify technical occupations and the form and content of two-year post high school technical education programs.

The junior colleges of Colorado have responded rapidly to the findings of an industrial survey conducted by the State Department of Education in 1960. This survey, conducted primarily to determine the State's need for technical manpower, clearly indicated a need for expanded technical education services. The newly-established Rangely Junior College at Rangely, Colo., scheduled to open in 1962, will offer programs in electronic, medical, and minerals technologies in addition to the traditional college transfer program, it was announced.

Conference Considers Apprenticeship Programs

The growing role of public vocational education in meeting the manpower needs of the Nation was highlighted at the recent Middle Atlantic States Apprenticeship and Training Conference in Baltimore, Md. More than five hundred representatives of labor, management, and education from seven States discussed training needs in the light of advancing technologies and recent Federal legislation.

In a general session on "What Funds —Federal-State-Local are available to support Apprentice and Journeyman Training," Howard K. Hogan of the Trade and Industrial Education Branch, explained the role of the U. S. Office of Education. He pointed out several ways in which its specialized personnel and services could be made available to assist in meeting the problems of apprenticeship training and journeyman upgrading.

A series of demonstration sessions was presented on selected techniques employed by various groups and agencies to show how different phases of apprenticeship training are handled by them. Among the topics covered were: "Good Classroom Instruction Techniques," "Group Problem Solving through Brainstorming," and "Selection Testing of Trainees."

Ford Motor Co. To Make AVA Membership Awards

In recognition of the services rendered by auto mechanics teachers to the automotive industry, the Ford Motor Co. will award two AVA life memberships to vocational auto mechanics teachers at the AVA convention in Kansas City, Mo., on Dec. 5.

Nominations must be sent to R. D. Williams, Dealer Service Publications Manager, General Sales Office, Ford Motor Co., Dearborn, Mich., by Nov. 10. Forms may be secured from Mr. Williams or from field personnel of the department.

ADDRESSES HOOSIERS: Dr. William B. Logan of Columbus, Ohio, AVA president, addressed the recent annual meeting of the Indiana Vocational & Practical Arts Association. He is shown above with the newly-elected president of the association, Mrs. Harriet Beasley (left), and the president of the Indiana Vocational Home Economics Association, Mrs. Marian Rugg.

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President of Los Angeles Technical College Gives His Views on Specialized Soviet Schools

During a recent press conference, Parker Wilber, President of the Los Angeles Trade-Technical Junior College, gave a brief report on his views of the strengths and weaknesses of USSR *technikums* following his 8,000 mile trip throughout Russia.

He pointed out that the Russians deliberately divert students into study areas where there are shortages of highly skilled and technical workers. He stated:

"Instead of resisting this deliberate diversion into various study areas, the young Soviets gladly accept it because they are imbued with a willingness to do anything that will make Russia a universal power among nations.

"We found that while the school buildings were in poor condition, the laboratories contained so much up-to-date equipment that they should be considered small industries in themselves.

"Specialized Soviet schools never enroll the second best students into their programs even though they have quotas to meet. The students take numerous examinations before they are admitted to any specialized schools or universities."

President Wilber further observed that among the weaknesses found were *technicums* that are miniature engineering schools, a lack of manipulative skills training, and no on-the-job training. Laboratory assistants, who spend twice as much time with the students as their instructor-lecturers, have little practical work experience, President Wilber observed.

National Youth Groups Honored at AIC Meeting

Fourteen national youth organizations in the United States and Canada were honored during the general sessions of the American Institute of Cooperation held recently at the University of Minnesota.

V.I.P. representatives designated by these organizations reported on the objectives, program, and accomplishments of their organizations, including relationships with farmer cooperatives. There were 3,250 youth and adult agricultural and educational leaders from all the states and a number of foreign countries in attendance.

The youth program included keynote speakers, panel discussions on topics pertinent to rural life, farm business and youth.

NEA Clarifies Action Dealing With Membership

In the September issue of the JOURNAL we quoted from the June 30 *NEA News* a statement on action taken by delegates at the 1961 Convention dealing with membership in the NEA. We have learned that this statement in the *News* did not carry the full action of the NEA delegates, which is as follows:

"(a) Requirements. Any person who is actively engaged in the teaching profession or other educational work may become an active member at any time until Aug. 31, 1964. After that time any person who is actively engaged in educational work of a professional nature shall be eligible to become an active member of the Association if he (1) has an earned bachelor's or higher degree and (2) where required holds or is eligible to hold a regular legal certificate of any kind except an emergency substandard certificate or permit. (b) Continuation of Membership. Any person who is an active member of the Association for the membership year 1963-64 is entitled to continue as an active member of the Association."

Electricity-Electronics Group In Illinois Holds Meeting

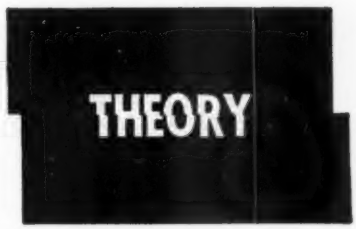
The recently organized Illinois Association of Electricity-Electronics Educators held its semi-annual meeting last month in Arlington Heights, Ill. The final draft of a constitution for the organization was scheduled to be submitted to the general membership.

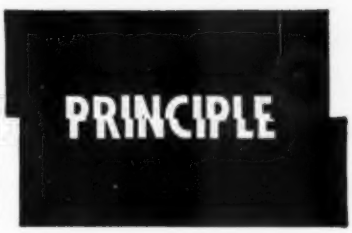
The new officers of the organization are: John W. Griffith, president; Floyd Corl and John A. Striepling, vice presidents; Dave Baker, secretary, and T. W. Whitfield, treasurer.

The address of the secretary, Dave Baker, is Lyons Township High School, Western Springs, Ill.

Opportunities Publicized

The magazine, *The Battery Man*, published by the Independent Battery Manufacturers of America, Inc., carried in its September, 1961, issue a feature story on "Opportunities for Your Industry in Vocational Training."





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PEOPLE IN THE NEWS

Dr. W. T. Spanton Retires as Agriculture Director In U. S. Education Office After 36 Years' Service

After 36 years of service in the Division of Vocational Education, Dr. William T. Spanton retired at the end of October as Director, Agricultural Education Branch in the U. S. Office of Education, Washington, D. C.

Dr. A. Webster Tenney, a specialist in agricultural education with the U. S. Office since 1943, has succeeded Dr. Spanton.

A native of Kentucky, Dr. Spanton joined the Federal Board for Vocational Education, now the Division of Vocational Education, U. S. Office of Education, in 1925 as Agent in Agricultural Education. He assumed the position from which he has just retired in 1941.

Dr. Spanton helped to establish the Future Farmers of America. He has continued to remain in a role of leadership with this and other youth organizations and since 1944 has been President of the Future Farmers of America Foundation.

Numerous honors have been bestowed upon Dr. Spanton during his long career. They have included the Honorary American Farmer Degree in 1931; a certificate of merit in recognition of this service in the administration of the Food Production War Training Program in the country's public schools by the State Directors of Vocational Education in 1945, and a life membership in AVA in 1949. He will be greatly missed by his colleagues and hosts of friends and professional associates throughout the country.

Dr. Tenney, the new director of the Agricultural Education Branch, joined the Office of Education in 1943 as specialist in Agricultural Education Subject Matter and National Executive Secretary of FFA. In 1951, he was promoted to specialist for Agricultural Education in the Central Region, where he served through 1958.

Dr. William T. Spanton

During 1959, Dr. Tenney took leave of absence to serve as Executive Director of the Agricultural Hall of Fame. Upon returning to the U. S. Office, he served until his new appointment as specialist for Program Analysis in the Office of the Assistant Commissioner for Vocational Education.

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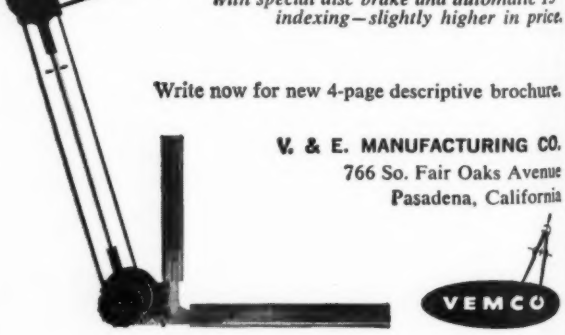

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A native of West Virginia, Dr. Tenney earned the Bachelor of Science degree in agricultural engineering in 1930 at the University of Florida. He received the Master of Arts degree in 1933 at Ohio State University and the Doctor of Education degree in 1951 from New York University.

Prior to joining the U. S. Office of Education, Dr. Tenney taught vocational agricultural education in the secondary schools of Florida and was Professor of Agricultural Education at the University of Florida.

Vocational School Director Appointed to State Board

John A. Butler, Director of the Dunwoody Industrial Institute, Minneapolis, Minn., has been named to the State Board of Education, which is also the State Board for Vocational Education.

Butler

Butler, 51, has been on the Dunwoody staff since 1931. He has been Director of the privately supported Minneapolis Industrial and Technical School since 1958 and was Assistant Director for 13 years before that.

ICA Official Returns From Haiti Assignment

George N. Wakefield of Homestead, Fla., an agricultural education adviser with the U. S. International Cooperation Administration, has completed four years of service in Haiti. He returned to the United States recently on home leave before transferring to another ICA post.

During his tour of duty on the Caribbean Island, Mr. Wakefield, a member of AVA, and his Haitian assistant organized a program of agricultural education for elementary, secondary and normal schools and provided training for teachers and normal school students to carry out the program.

They planned farm demonstrations which have been held in 75 rural elementary schools. Through workshops, they provided an opportunity for teachers and rural school inspectors to learn new skills and improve their knowledge of scientific agriculture.

Mr. Wakefield said that he received his greatest satisfaction from the individual garden program which he helped to start in 1958 in six schools. By 1960, children in 40 schools were growing vegetables.

Fred J. Jeffrey Dies

Fred J. Jeffrey, 83, a life member of AVA, died Aug. 16 of a heart ailment at a hospital in Orlando, Fla. He was a former assistant superintendent of instruction and former principal of Hadley Technical High School in St. Louis. He had moved to Florida following his retirement in 1948.

Receives Scholarship

Congratulations to Jerry Fedeler, Sumner, Iowa for winning the Alpha Gamma Rho Scholarship of $200 for 1961 which is sponsored by the NVATA in cooperation with the AVA. Mr. Fedeler has accepted the award and is now enrolled at the Ohio State University in Columbus, Ohio.

U. S. Education Office Makes Three Appointments

Three appointments to staff positions in the Vocational Division of the U. S. Office of Education, Washington, D. C., have been announced.

James L. Patton, Assistant Superintendent of Public Instruction for Kentucky, has joined the Division as a consultant on training and retraining. Mr. Patton, who has had many years of experience in vocational education in Kentucky, will direct a staff to administer training and retraining as authorized by the Area Redevelopment Act.

Dr. Mattie Pattison, formerly Professor of Home Economics Education at Iowa State University, was named Education Research and Program Specialist in the Home Economics Education Branch. She will assume leadership on guidelines for curriculum developments in home economics.

Edwin L. Nelson, formerly State Supervisor of Distributive Education in Iowa, has joined the Distributive Education Branch as Program Specialist for the Central Region.

Prior to his appointment to the Distributive Education Branch, Mr. Nelson, editor of the JOURNAL's Distributive Education Department, had served in the Iowa post since 1953.

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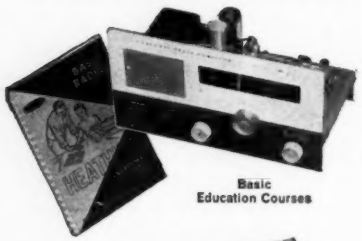

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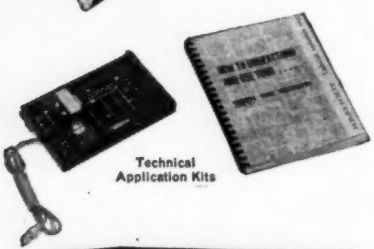

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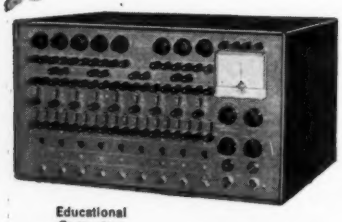

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Books

Organizing Course Materials For Industrial Education

By G. Harold Silvius and Ralph C. Bohn, McKnight & McKnight Publishing Co., 1961, 459 pages, $6.50.

This book is designed to help both beginning and experienced teachers develop course materials in industrial education. It should also help supervisors, administrators and teachers as they undertake to prepare curriculum guides, courses of study and instructional materials.

The content of the book has evolved over a period of several years. The activities of teachers, as they prepare curriculum materials for industrial education, were first identified in a research project conducted by one of the authors. Numerous examples of materials prepared by teachers for specific teaching situations are included.

Our Soils and Their Management

By Dr. Roy L. Donahue, Interstate Printers and Publishers, 1961, 570 pages, $5.25.

The author has as complete a grasp of soil and water management as anyone in the world—as wide an understanding as the width of agriculture in this country and abroad. That's why the second edition of his book has to be the standard of excellence in this vitally important field.

Dr. Donahue can look at the soil situation in the broad scope yet retain and pass on an appreciation of soil in detail. Farmer or student, this book will contribute much to the basic knowledge of both.

Home Mechanics

By Carl J. Schaefer, Bruce Publishing Co., 1961, 148 pages, $2.22.

Carl J. Schaefer, Associate Professor of Industrial Education at Pennsylvania State University, has written a basic text for use on either the junior or senior high school level. The book introduces some of the more recurrent repair jobs to be found around any household, including appliances and fixtures.

It includes the planning of a workshop area and care of tools, handling of various building materials, refinishing with paints, varnishes, repairs to furniture, electrical appliances and structural defects, both interior and exterior of the home.

The author, who has been teaching industrial arts for almost 20 years, holds a doctorate in Industrial Education from Ohio State University.

Intelligence and Attainment Tests

By Philip E. Vernon, Philosophical Library, Inc., 1961, 207 pages, $7.50.

This book is a comprehensive survey of objective tests written in straightforward and non-mathematical language. It includes a brief history of testing, explains and criticizes individual and group tests in general and describes most of the tests widely used in English-speaking countries.

Professor Vernon also discusses the nature of intelligence and its origin, both hereditary and environmental, and concludes with a chapter on the educational and vocational implications of intelligence testing. The book is of particular value to those persons concerned with intelligence testing and personnel selection.

Fundamentals of Carpentry—Vol. 1: Tools, Materials and Practice

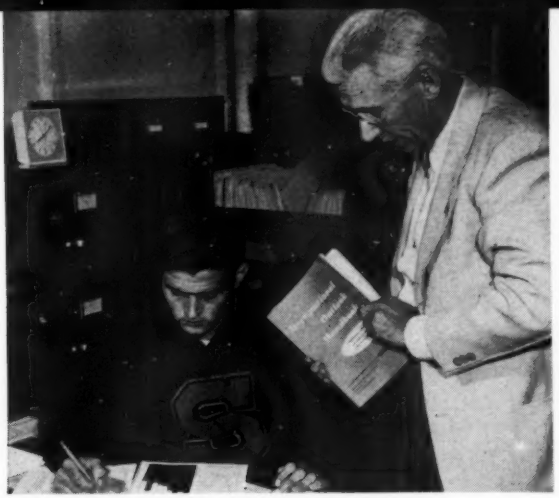
By W. D. Durbahn, American Technical Society, 1961, 383 pages, $4.75.

This is the third edition of a popular book. In updating, Durbahn has added an entire new section devoted to the use and care of power tools with particular emphasis on safety precautions. Renovated also is the section on wood fastenings which discusses the new types of nails, glues, screws, and fastener coatings.

Home Furnishings

By Anna Hong Rutt, John Wiley & Sons, $7.50.

Anna Hong Rutt covers in well over 500 pages just what the title implies. From soup to nuts—or welcome mat to attic—Mrs. Rutt's book, which has been completely updated in this corrected second edition, perhaps tries to cover too much ground. Nonetheless homemaking students, homemakers and interior decorators will find this guide an indispensable reference. *Home Furnishings* does cover a subject often overlooked in guides and references: how to stretch dollars to their fullest.



EDUCATING STUDENTS

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SOLOMON BARKIN, *Director of Research, Textile Workers Union of America*

EDUCATIONAL FACILITIES, goals and methods must be attuned to the times. The more laggard they are, the more the community and the people will suffer.

In this world of accelerated change, a primary task of the leaders of each agency and institution is to keep abreast of the changes in the society which affect them. Sheer persistence in old ways, however good and tried, may be pointless. Particularly, this conservatism must be subordinated in our educational institutions preparing young people for their adult lives.

If training is to serve these prospective citizens, it must be of the type which will adapt them to the world they will enter and the society in which they will later live. The education must therefore have a prescience of the future while he shapes present programs.

But knowledge of the developing technology and economy is only one approach to the understanding of the educator's challenge. Man himself is not static. He is also an unfolding individual. His talents and gifts are the rich soil upon which human progress rests.

Our school system has, therefore, the obligation of helping each individual in his self-realization. As society becomes more complex and diversified, the needs become more varied and the opportunities for the individual multiply. Each has more of a chance to make a mark in serving the common good by expressing himself more fully.

The human variety flows not only from the diversity of individuals but from the wider range of people participating in our society. From primitive times, we assumed that only the young need to be taught. They were thus introduced to our society. Some individual nations have taught that man must devote himself to continuing study of the eternal verities. Our present population explosion presents us with the great issue as to whether the extention of our life span calls for educational facilities not only for the young but also for the adults.

If they are to remain producing members of the society, will it be enough for them merely to have the training of their youth supplemented by their experience as adults?

If we will have to be productive for such long periods, do we need to change our methods so that the young shall be trained not primarily for an immediate task, but also for productive enterprise over a full life span?

The educator must continuously evaluate the human resources and perceive how he can be helpful in the process of personal self-realization as well as to understand the economic and social environment to help him shape his curriculum and studies. *(Continued on next page)*

HUMAN RESOURCES

No less important than the changes in our society are the new work groups in our midst. Our population is growing strikingly as youths marry earlier and the family increases in size. Ahead of us lies an era in which there will be many young persons under 25 years of age looking for work and an impressive expansion of oldsters in our work force seeking gainful employment. Older women relieved of their home-making responsibilities by labor saving facilities, the extended schooling of their youngsters, and their yearning for higher standards of living will move into the labor force in greater numbers looking for part-time and full-time jobs.

It will be a work population of people from the full span of ethnic, religious, and color groups within our society. Their educational experience will be longer and of higher quality than ever before enjoyed by our population despite the failings which may be underscored in every part of it.

Many new essential human attitudes have to be reinforced. Tolerance for human variety and difference has to be widely shared as people of diversified ages, colors, religions, and ethnic origins mingle in our social system. They are and will be interdependent. This unity can be cemented best by the propagation of a conviction of responsibility for others.

The human stream with which we will have to deal consists no longer merely of the citizens of our own nation. We shall have to include the tens and hundreds of millions of people in other countries, some of whom come to our shores to study and to whose lands we shall go to assist in training, research, planning and in accelerating development to bring them ever closer to the material, cultural and spiritual opportunities which we enjoy in this country.

We shall have to be our brothers' keeper not merely as a moral obligation but to win acceptance by these newer peoples. Our ultimate freedom and security will depend upon the long-term confidence in our ways and values that we shall implant in them.

DYNAMIC ECONOMY

A changing people will be living in a dynamic technical and economic society. Many have already noted that the rate of economic change has been hastened. Illustrative of the new challenge is the constantly rising rate of man-hour productivity. The old is being displaced by changes more quickly than ever before and we can anticipate that this process of acceleration will be increased.

In the past, we expected that economic growth would occur largely through increases in resources. More land, more people and more capital would enrich a country. Economists thereafter instructed us in the principle of factor substitution. National economic wealth could be advanced through the replacement of the scarce and costly factors of production by the abundant and cheaper ones. Capital in replacing human labor could improve our economic output.

The story of the first industrial revolution in a large part was told by this primary experience. Machines replaced manual labor and tools; mass production and factories took over where the cottage industry and the craftsman mill had left off; custom made products gave way to standardized wares. Machine transportation hastened movement when they replaced the animal and waterways. The manual worker with his skill gave way to the machine operator and tender. The crafts were denigrated in varying degrees. We have not yet seen the end of this process.

Machines Replace Men

Toward the end of the last century we witnessed the introduction of a third tool for economic advance; the application of "scientific management." The second industrial revolution recognized that economic incentive would induce man to increase his work effort level; introduced modes of measuring human and business performance; and promoted the specialization of management's functions as mass production had done for manual workers.

While the first industrial revolution had dehumanized the operative into a "hand," the second had converted him into an "economic automaton." Management personnel represented the quintessence of the new age; a specialist who pursued his functions determinedly for his own self-interest often with little direction from the top.

The fourth road to economic progress is being ushered in by the third industrial revolution. Automation is the generic term for the new era. Not that the new machines whether they be the transfer machine servo-mechanisms or electronic computers represent the new period, they are only some of the tools. We are constantly adding newer techniques such as: atomic energy, solar energy, newer communication and electric procedures and the myriad of other innovations and developments of the present technological milleu.

The important attribute of the new industrial revolution is the new integrated system. It began in the military world with the weapons system and was followed by the industrial world. We are creating a new series of integrated business systems which substitute centralization for the coordination of managerial specialists.

In this new era, machines are replacing men in the performance of mental operations. Many processes of production and fields of human endeavor which defied mechanization are now being converted. Clerical, technical, and professional men are being displaced from many tasks as machines take over their operations.

Concurrently, new jobs are rising in other areas. The significant fact about the new era, from the point of view of the persons preparing themselves for employment, is that the third industrial revolution is making a machine tender out of the brain worker. Older skills and experience of the white collar worker and professional are being rendered obsolete and both blue and white collar workers are being forced to seek new fields of employment.

Another consequence of this accelerated rate of change is that it has hastened not only human economic obsolescence, but also that of localities. In earlier epochs, the shift from one technology to another tended to affect older areas. Many suffered seriously because their locational advantages were reduced or eliminated.

Mechanization grew with the broadening of the markets and local custom industries dwindled. Most dramatically, the increase in the size of locomotives and their ultimate dieselization eliminated the need for any railroad repair shops. Currently, the growth in automobile and airplane travel has caused the abandonment of many smaller railroad lines.

This trend toward geographical upheaval has been strengthened by automation. It will tend to eliminate many intermediate stages in the processes of

IBM Photo

The third industrial revolution is making a machine tender out of the brain worker.

production, communication, and services. Instructions are being increasingly given directly from central offices, despite distances along the points of communication. Records are now being assembled in one office from widely dispersed information production centers.

Many way stations in the systems of management, distribution and communication, and service will disappear. Operations are being telescoped so older plants will be closed. Older physical structures are being scrapped as designers and builders create more economic newer ones, often located in different areas.

Conservation Accented

As the process of technological change is causing faster and faster rates of obsolesence, the economist is recognizing largely at the instance of the practitioner that conservation is a fifth road to economic growth. While complete replacement of the obsolete may be cheaper in many instances, the increasing cost of a unit of capital of our existing industrial society causes one to hesitate.

As a result, we early accepted conservation of natural resources as a basic principle for our natural resource policy. This view is taking deeper and deeper hold on our society as we learn to make the central city more viable through urban renewal. All political parties are mouthing the wisdom of rebuilding our distressed areas. Our people are increasingly convinced that most regions of chronic unemployment must not be forsaken; they must and can be helped to redevelop.

Whatever verity there may be in this principle of redevelopment for our physical resources and capital and our economy, there is no doubt about its fundamental soundness in the case of individuals. Physical rehabilitation has proven economical and humane.

Small investments in medical care, prosthetic devices, and training have made self-supporting and self-respecting citizens out of millions. Mental hygiene has rebuilt the self-confidence and assured normal participation by many. Retraining has helped to shift many to new employment. Specialized guidance and employment services have worked wonders for many marginal groups in the work force.

We have therefore learned the important lesson that humanity and economics both teach that rehabilitation and redevelopment are sound. Such activities demand the visualization of the human as a whole and the assets as parts of a system. The principle guilding the new automated age of systems analysis has increasingly become the tool for revitalizing the human and physical assets which, in the past, we scrapped. This we can no longer afford to do.

Many basic changes have taken place in our economic environment following the process of economic growth through mechanization, the application of scientific management, automation and now redevelopment. Mass production replaced individual unit output to be followed by loose coordination, specialization and now centralized systems organizations. The processes of simplification of the units has increased the costs of the systems so that conservation and redevelopment are gaining acceptance in place of the scrap heap.

MODERN JOBS

THESE INDUSTRIAL movements will produce major changes in the nature of jobs in industry. A new type of production worker is appearing; maintenance jobs are expanding; and professional and technical employments are expanding more rapidly.

The movement from the handicraft to the mass production job meant the reduction in the amount of physical work, increased specialization of functions, and the removal of the responsibility for the manufacture of the total product. The craftsmen employed tools and controlled the quality and speed of the output.

The mass production worker, on the other hand, became a machine operator controlling, directing, steering, or tending machines. The amount of training required for them varied

(Continued on Page 38)

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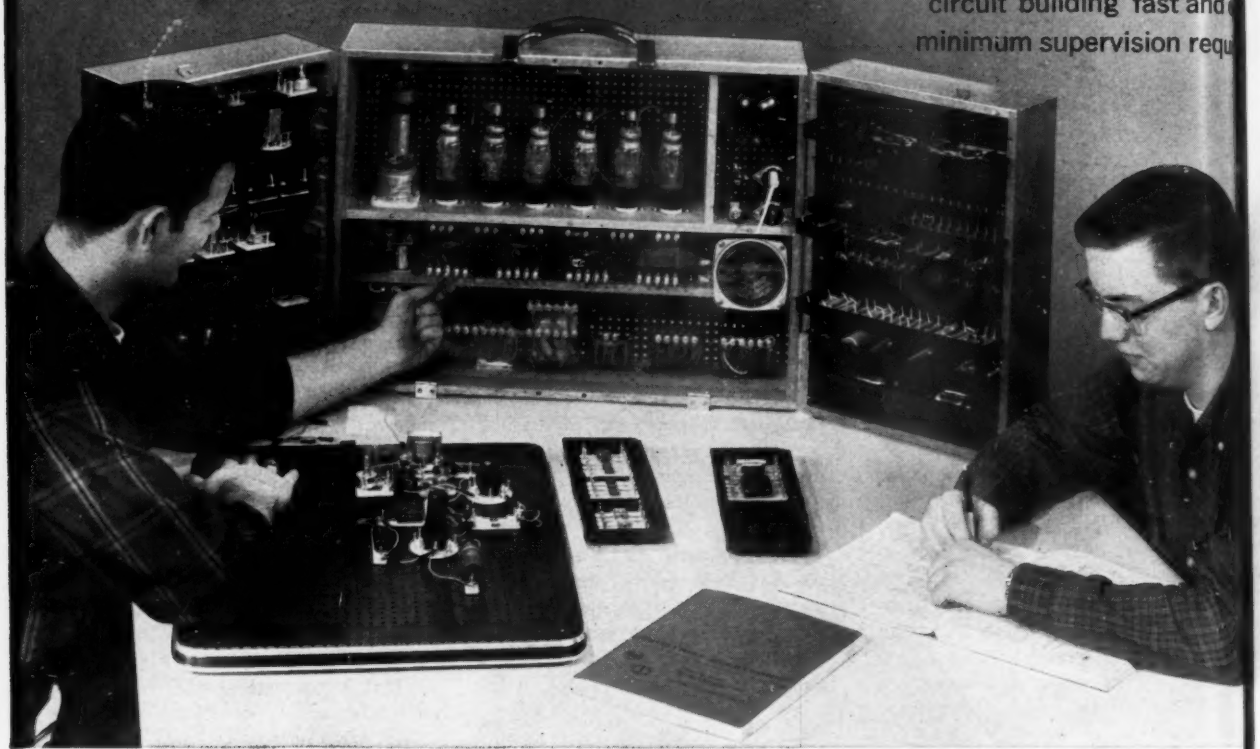

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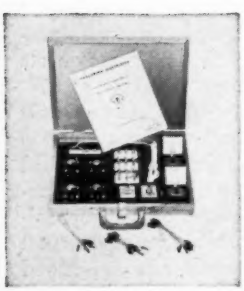

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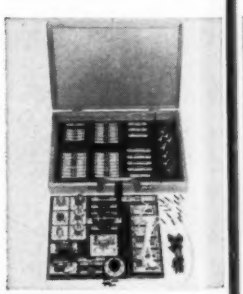

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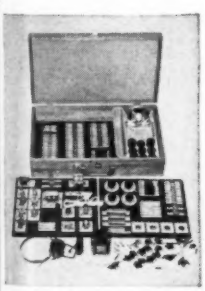
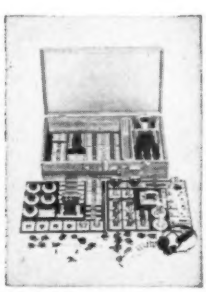


BASIC ELECTRONICS (First Year Course) 31 experiments from EIA manual covering transistors, vacuum tubes and applications, using schematic diagrams.
BE-4 — $180.00



COMBINATION KIT BE-5 (First Year Course) 68 experiments from EIA manual covering "Basic Electricity", "Basic Electronics", and "Basic Radio".
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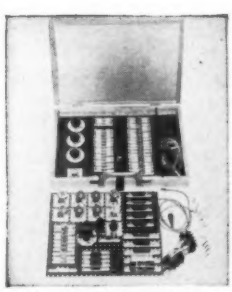

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CREATIVITY AND PROBLEM SOLVING

THE IMPLICATION FOR INDUSTRIAL ARTS

Charles E. Tressler, *Industrial Arts Department, Montclair State College*

CREATIVITY is the result of knowledge, experience and another factor that can best be called intuition or inspiration. It is this last factor that should challenge the educator in our educational systems.

The teacher should create a thought provoking or problem situation, taking advantage of a present or possible interest of the students. Their interest is then guided by the teacher and extended to more remote situations that may be educationally more significant. From this introduction, research methods are introduced and research may be organized for individuals, groups, or committees to work separately on special phases of the topic.

The activities include reading, writing, sketching, making models, dioramas, and constructing projects. Through this experience, the student should acquire facts, skills, understanding of principles (especially scientific and technological), attitudes, and ideas.

The first essential element of high quality education is intellectual development to fulfill the highest potential of individuals: facts, skills, understandings, problem-solving ability and creative capacity. Essentials of the learning process call for the full use of all senses, motivation through having interests and goals, and a balance of first hand and vicarious experiences.

In March, 1959, G. Harold Silvius wrote what he believed to be the *Functional Aims for Industrial Education in American Schools.* Silvius stated:

"Industrial education in the comprehensive high schools of the United States should be maintained in shops, laboratories, or drafting rooms especially designed and equipped to provide a comprehensive curriculum to meet the specific needs of students with varying abilities, aptitudes, and desires and interest.

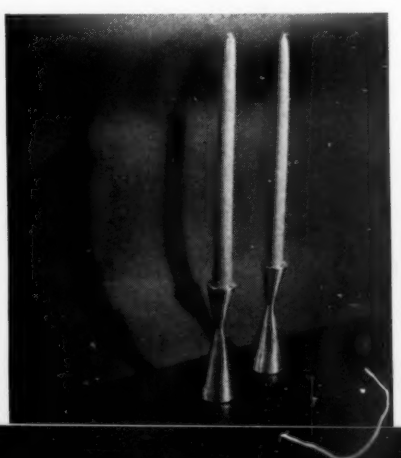
"This calls for an instructional program that includes, *as one of its major functions,* provision for the student (or group of students as a team) with a burning interest in one or more of the industrial arts activities to do intensive research and planning, use modern tools and machines, and to use the most appropriate materials in the construction of a project. The emphasis, in this one aim for industrial education at the comprehensive high school level, should be on problem solving and the application of scientific principles through creative manipulative experiences."[1]

It is felt that growth in creativeness has two main aspects: growth in ability to meet live situations in ways that are new to the individual, and increased desire on the part of the individual for creative expression.

The essence of creative action lies in problem solving. Creative efforts come from the application of imaginative thought to a perplexing or disturbing situation. The projection of creative thought to concrete form is the final development of creative activity, and may be expressed either in constructive activity or in the development of individual or group insight and understandings.

Obviously, the solution of certain problems demands the invention or discovery of new methods, techniques and concepts unique to the individual but not new to the teacher or to society. Creative expression will vary with each individual and with each

THE TEACHER SHOULD CREATE A THOUGHT PROVOKING OR PROBLEM SITUATION



LEFT: Aluminum candle holders demonstrate research and planning and use of modern machines and tools. BELOW: Salt and pepper shakers show creativity in solving a problem in unique design in industrial arts.

unit studied. Some units offer little opportunity for construction activities, but may be rich in activities involving reports, visual aids, and interpreting real life situations.

A problem exists when the end to a desired goal is not clear. The problem is solved when the ways and means for solution are found. The process of solution, then, is a process of seeking and finding.

Problem solving is done in industrial arts work through the processes of thinking, motor exploration, and manipulation. Concepts learned in previous experience are applied to the new problem, usually being recalled by their verbal symbols.

New concepts may be invented for handling the novel problem. Principles are remembered and given a trial. Language enables the thinker to talk to himself about his problem and also to talk it over with his peers and enlist their assistance. The solution to a problem must be obtained through reading, research, and experimentation.

Woodworth and Marquis summarize problem solving behavior as it pertains to the psychology of thinking in the following manner:

"Problem solving behavior occurs in novel or difficult situations in which a solution is not obtainable by the habitual methods of applying concepts and principles derived from past experience in very similar situations.

"a. Certain problems contain obstacles to clear thinking, as when the situation presents insufficient data, irrelevant data or inconsistent data.

"b. Guiding ideas determine what kind of attempts at solution will be made. If all the attempts arising from a certain guiding idea are fruitless, it is wise to discover a different guiding idea.

"c. A hypothesis is a principle which is invented and applied in a problem situation in the form of a question. It is tested by figuring its logical consequence in the situation, trying it out, and observing whether the predicted results are obtained.

"d. An incubation period is an interval of time during which the problem is laid aside after preliminary attempts at solution have failed.

"e. Rational thinking has something of the character of trial and error behavior, but it differs in being ideational rather than motor, and in being a planned attack on the problem."[2]

In the *Industrial Arts Teacher*, Aarre K. Lahti relates his commentary on problem solving in industrial arts classes. Lahti says:

"I can foresee a date which will be upon us far sooner than we dare believe, the date when our students will be primarily concerned with problem solving. As our society and technology become ever more complex, our students cannot be provided with a package of skills adequate for future problem solving needs.

"However, if the student has been fortunate in his training, he will have acquired the how of problem solving. He will be able to analyze and recognize what skills are essential, how and where to seek them and then teach these skills to himself. Skills will be mostly self taught. The skills the student acquires will be only those that he needs for the problems at hand. His problems and skills will be ever changing.

"Finally, the phase that will follow that of how to solve problems will be that of what problems to solve."[3]

In summary, the following points could be stated to justify the problem solving method as a new technique in the field of industrial arts as opposed to simply copying ideas from books, magazines, and teacher-made plans.

1. Although problem solving is not new to education as a whole, it has not been used to any great extent in industrial arts.

2. Problems may be solved in industrial arts through the utilization of tools, materials, and processes of industry.

3. Students are capable of solving problems on whatever level they happen to be.

4. Creativity can be stimulated through problem solving and sometimes may be one and the same thing.

5. Problem solving offers a challenge to the student.

6. Definite integration with other subject areas is found when the problem solving method is used.

7. Industrial arts teachers should be aware of the problem solving method and begin developing it along with other subject areas in general education.

8. Problem solving has deep psychological roots and could cause industrial arts students to do deeper thinking and indulge themselves in research.

9. The rejection of group participation retards, while the awareness of the inseparable nature of the need for others accelerates.

10. Through the problem solving method, the industrial arts student will have acquired the most valuable of all possessions, the self-confidence that he or she can tackle and solve new problems regardless of their nature or source. ■

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[1] Silvius, G. Harold, *Functional Aims for Industrial Education in American Schools*, Wayne State University, Detroit (2), March, 1959. p. 3.

[2] Woodworth, R. S., and Marquis, D. G., *Psychology*, New York: Henry Holt and Company, 1948. p. 623.

[3] Lahti, Aarre K., "Design for Industrial Arts," *The Industrial Arts Teacher*, 19:4, March-April, 1960. p. 7.

RIGHT: Spun aluminum lamp aids in solving a lighting problem—example of creativity in design. BELOW: Spun frying pan with aluminum inside, copper spun cover for bottom and walnut handle, exemplifies problem solving throughout.

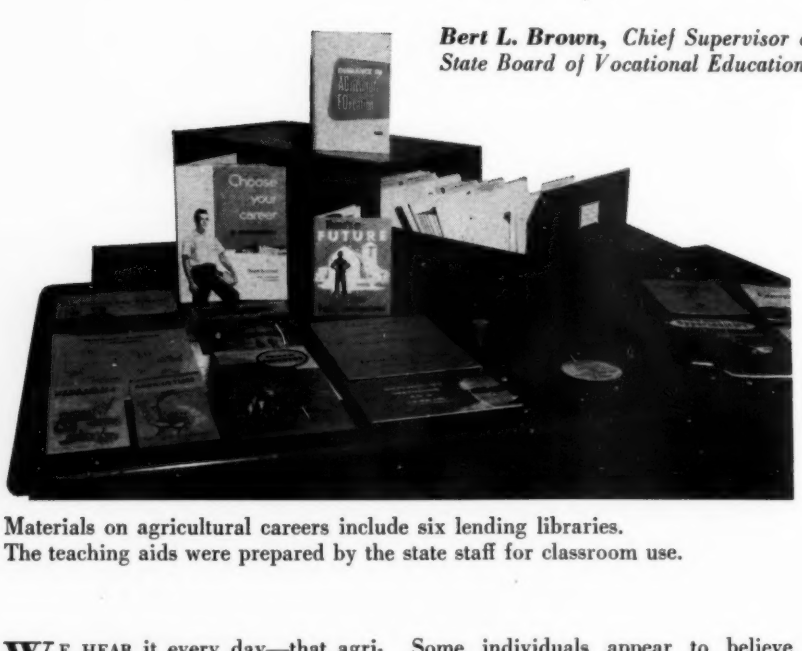
Statewide Program Promotes

OPPORTUNITIES

in Agriculture

Cooperative project in State of Washington pays dividends. Guidance program conducted by Vocational Agriculture and College of Agriculture is directed to general public and young people

Bert L. Brown, *Chief Supervisor of Agricultural Education*
State Board of Vocational Education, Olympic, Washington



Materials on agricultural careers include six lending libraries. The teaching aids were prepared by the state staff for classroom use.

WE HEAR it every day—that agriculture is a declining industry.

The current agricultural situation is misunderstood by many people. Agriculture has become the "whipping boy." The farmer is blamed for high taxes, mainly because a few agricultural products in surplus are receiving governmental support. He is blamed for the high prices of food and other commodities. It has even reached the point where some people are prone to believe that farmers, in particular, and agriculturists, in general, are parasites in our economy.

The surplus of agricultural products and the decline in the percentage of our population which is engaged in farming has led some to reason that agriculture is a declining industry. Some individuals appear to believe that the decline will continue to the point that farming will no longer be important.

We who are engaged in agriculture know the facts. The truth is, agriculture is an expanding industry in every respect except one—the number of people required to run our farms.

Enrollment Declined

All of this talk about a declining agriculture was to have its effect. Of primary concern were the declining enrollments in our vocational agriculture departments and in the College of Agriculture. Boys, many of them the better students, were being advised not to go into agriculture — that agriculture today did not provide any opportunities, particularly for the intelligent and enterprising young man.

Since we had mutual problems, Vocational Agriculture and the College of Agriculture of Washington State University decided to team up on a guidance program designed to acquaint the public in general and young people in particular of the importance of agriculture and the opportunities which exist in the expanding, efficient, broad agriculture of today.

Through studies, several determinations were made:

1. Our study of 284 agriculturally associated businesses, *Training Needs in Business Associated With Agriculture,* convinced us that many fine career opportunities existed in the entire field of agriculture and, further-

more, that the needs of trained men in these businesses closely associated with agriculture are on the rapid increase. This is borne out by studies of the special committee of the Association of Land Grant Colleges and by vocational agriculture in California, Pennsylvania and other states.

2. That vocational agriculture should broaden its base to include the background experience and training in agriculture which is essential or highly advantageous for these associated industries. We in vocational agriculture would not attempt to give the technical training.

This would be a field of training for the area vocational school, the junior college, the university or the business itself. Although we had no thought of doing so, these businesses advised us not to drop the supervised farming aspect of our program for any of our students. This phase continues to be essential for all students enrolled in vocational agriculture.

3. In any agriculturally oriented guidance program, in fact in any guidance program, in a rural high school the vocational agriculture instructor is a key person due to the fact that through his visits to the supervised farming programs and the homes of his students he has an understanding of their attitudes, circumstances and environments that is not equalled by that of any other teacher.

4. Boys who do not enroll in vocational agriculture in high school seldom enroll in the College of Agriculture. Seventy-five to eighty per cent of each year's incoming freshmen in the College of Agriculture have had three- or four-years' training in vocational agriculture. If vocational agriculture doesn't get them, neither does the College of Agriculture.

5. We determined that there were more than 1,000 teachers, high school principals and others who were charged with the responsibility of guidance and counseling in our public high schools. These were the men and women who were counseling boys to prepare for, or not to prepare for, a career in the agricultural occupations. Few of these counselors had training or background experience in agriculture which would give them more than a meager concept of the opportunities in the entire field of agriculture. Thus, the vocational agriculture instructor again becomes a key person with an obligation not only to inform his students, but particularly guidance personnel and the public in general of these career opportunities. Obviously, the vocational agriculture instructor needed an assist.

To help the teacher meet this obligation, the state staff have prepared and assembled materials on career opportunities in agriculture and made them available for use. Consequently, we have prepared and distributed the following materials:

Vocational Agricultural Instruction—What It Is, Where It Leads, Its Relationship to Other Types of Instruction.

The content of this manuscript is explained in its title, and its primary purpose is to place in the hands of the teacher, the counselor, the school administrator and others, a syllabus, which in a few pages would give them a better understanding of the importance of agriculture and how instruction in vocational agriculture and farm experience may lead to careers in the many fields of agriculture.

Newspaper Articles.

This is a series of articles designed to tell the story of vocational agriculture through the media of the weekly newspaper. They are skeleton articles in which the teacher can write in the local adaptations and which would appear in the local paper under the by-line of the local vocational agriculture teacher.

Agricultural Occupations Information.

This is a bibliography of sources of information on the agricultural occupations—a listing of the books, bulletins, brochures and visual aids pertaining to the many careers in agriculture. We found many sources describing the various occupations of farming and those occupations in technical and professional agriculture requiring training in college, but somewhat of a dearth of material on the associated businesses of agriculture.

You Can Take It With You.

This is a two-color poster depicting how a boy's farm background, farm experience and interest in a specific area of study—science, communications, etc.—can lead to a specific career or group of careers in agriculture.

Your Career Unfolds.

This is a single sheet with a three-way fold, designed to do three things—to tell the students what they may learn in vocational agriculture, that it is possible to take three to four years of vocational agriculture and still prepare for college, and the opportunities in agriculture after graduation from high school.

Instructional Guides for Career Guidance in Agriculture.

A guide designed as an assist to the teacher in presenting a unit on the career opportunities in agriculture. It also lists the materials which are of the most value, and included in our lending libraries, among the many listed in the bibliography.

Lending Libraries.

We prepared six lending libraries (single-drawer files), each containing sufficient copies for classroom instruction, of the publications which were deemed of the most value of those available on agricultural occupations. We also made available two copies of the film "Careers in Agriculture." Each supervisor has one of these libraries and schedules it to a school for a two-week period. More than fifty per cent of our schools have used them in connection with a unit on agricultural careers.

Much of the material which we have placed in the hands of our teachers was not written by the state staff but was obtained, using the bibliography, from other sources, such as commercial publishers, governmental agencies, and colleges. Teachers are urged to gather their own source material, and many of them have.

Attract Better Students

This program has taken considerable time, effort, thought and consideration on the part of state staff. It has been three years of studies, summer conferences, area meetings, school calls, talks to groups, personal contacts with teachers, administrators and counselors, telling of the importance and the opportunities in agriculture.

It has paid dividends. In the year 1957-58 we were at the low point in our day-school vocational agricultural program, having decreased about 900 students in the preceding three years. This past year we have not only gained back the 900 but over 100 more students, and we have just reason to believe that we have retained more of the better students too—not only a fair share of students but also our fair share of those of the higher academic ability. ■

The Outlook for

THE SKILLED WORKER

Implications for guidance and counseling

Seymour L. Wolfbein, *Deputy Assistant Secretary of Labor, U. S. Department of Labor*

THE UNITED STATES today has about 8½ million employed craftsmen and foremen—the skilled sector of this country's manpower resources. They range from the biggest group of all—workers in the building trades, to mechanics and repairmen, to foremen and skilled metalworkers, to relatively small but highly critical occupations such as patternmakers and wire weavers.

What distinguishes this group is the high skill content of its jobs and the strategic role it plays in the over-all manpower posture of the nation.

Accounting for about one out of every eight members of the labor force, skilled workers erect and put into place buildings, plants and equipment; they make the models, dies, tools and patterns necessary before the rest of the work force can produce a myriad of items; they keep in repair the equipment of business, industry, farms and homes; they are the production workers in such industries as printing and machinery, and they are the foremen who supervise and train a substantial proportion of industrial workers.

The proportion of the American labor force which is skilled has remained remarkably stable during the 20th Century. While most, if not all, of the rest of the broad occupational groups changed their proportions to the total work force in a very substantial way, the craftsmen throughout this century have accounted for somewhere between one in eight and one in nine of all employed workers. The story for the manual worker since 1900 is told by the figures in the accompanying box.

In contrast to the relatively small changes in the proportion of the skilled worker to the total work force, there has been a marked increase among semi-skilled operatives on the one hand, and a drastic decline in the proportions in the unskilled trades on the other—all of these symptomatic, of course, of the technological revolution which has taken place since the turn of the century.

This relative stability in the skilled sector of the labor force underscores the continued importance of this group in the long run, in peace and war, in prosperity and depression. But it should not mask the very great changes which took place within the skilled group itself.

Back in 1900, six skilled occupations (engravers, locomotive engineers, brickmasons, blacksmiths and forgemen, metal molders, and shoemakers) loomed so important in American industry that they accounted for one out of every four of the skilled work force in this country; today, the proportion is down to about one in twenty.

Back in 1900, another six skilled occupations (carpenters, mechanics and repairmen, cranemen and stationary engineers, plumbers, electricians and telegraph and telephone linemen) comprised a little less than two out of every five skilled workers; today, it is estimated that the figure is closer to two out of every three.

Change, therefore, has been an important dimension in the occupational structure of the crafts and this is one of the major facets of our story—and one which is of overriding importance to the guidance and counseling field, as we will indicate later on.

AGAINST this background, what can we say of the outlook for the skilled worker during the current decade?

The first—and perhaps most important—fact is that the demand for craftsmen is expected to go up more rapidly in this decade than for any period since World War II. The Bureau of Labor Statistics projects a *net* increase of 2.3 millions in skilled workers from 1960 to 1970.

But this is not the whole story. An additional 2.7 million skilled personnel are expected to fall out of the labor force owing to deaths, retirements,

STORY FOR THE MANUAL WORKER SINCE 1900

Per cent of Working Population in Manual Occupations

	All manual workers	*Skilled (Craftsmen and foremen)*	*Semi-skilled (Operatives and kindred workers)*	*Unskilled (Laborers, except farm and mine)*
1900	36	11	13	12
1930	40	13	16	11
1950	41	14	20	7
1960	36	13	19	5
1970	36	13	18	5

SKILLED WORKER TRAINING REQUIREMENTS

Summary of the 1960-70 Picture

	(Millions)	
Needed number of skilled workers projected for 1970	10.9	
Number of skilled workers in 1960	8.6	
Estimated net growth 1960-70		2.3
Losses from skilled occupations, 1960-70:		
Transfers out of skilled work	1.0	
Deaths and retirements	1.7	
		2.7
Total number needed to be trained 1960-70		5.0

transfers to other occupations, etc. This means that an additional 5 *million* skilled workers must be trained during this decade to achieve the growth we need.

Occupations within the skilled crafts will vary, of course, in their rate of growth during this decade. In general, repair and mechanic occupations as well as such groups as construction machinery operators are expected to grow at a much higher rate than the national average of 20 per cent, while others such as locomotive engineers and blacksmiths are expected to show an actual decline. The detailed picture can be obtained from the Occupational Outlook materials of the Bureau of Labor Statistics.

The demand for skilled workers—as is true practically across the occupational structure—has another dimension besides the one of sheer numbers. What we will be seeing during the 1960s, as indeed we already are seeing—is an added emphasis on the quality of training and the quality of performance in the skilled crafts.

Back in 1950 about 60 per cent of the men working in skilled occupations did not have a high school education; today, a majority (about 52 per cent) of those going into this work do have a high school diploma; in fact, 10 per cent of them have some college education. But this may very well be a harbinger of a bigger increase to come, as we will see a little later on.

WHERE will all of these increases come from?

In trying to answer this question, three of the basic benchmarks concerning our population and labor force growth need to be known.

In the *first* place, the needs for craftsmen are expected to exceed both overall population growth and the increase in the size of the male labor force. The male population of the United States is expected to go up by about 15 per cent; male workers are expected to increase by about the same percentage; but the numbers of craftsmen needed —mostly male, of course, are expected to rise by about 25 per cent.

Secondly, the age profile of the male labor force during the 1960s also presents a problem in terms of the subject we are discussing. Thus, we know that about 50 per cent of all of our skilled workers are between the ages of 25 and 44. Yet, during the decade of the 1960s, this age group among the men will go up by only 4 per cent. In fact, in the central age group 35-44—the sector of our labor force from which we usually expect to draw our more experienced, mature, skilled people, there will actually be a *decline* of 400,000 workers between 1960 and 1970.

Thirdly, it is important to note that the pool of talent available for the supply of skilled personnel is also more limited today than it has been for any period in the past, and the expectations are that this condition will prevail during the 1960s. The increasing (and necessary and desirable) emphasis on academic career and college education to meet the job needs of the future has had an important impact on the supply of talent for the manual trades. The proportion of persons of college age enrolled in institutions of higher learning is now almost ten times as high (close to 40 per cent) as it was at the turn of the century.

Without in any way downgrading the need for college-trained personnel, it is important at the same time to emphasize and underscore the need for manually-trained personnel as well. In view of the necessary and desirable increase in the numbers and proportions going on to college, it is evident that the pool of talent available from which we can draw on for our supply of skilled personnel is that much more circumscribed.

It is instructive, in this connection, to see the British experience in this field. The Education Act of 1944 in that country, which enabled the more able boys from working class families to take advanced education, has apparently adversely affected the quality and quantity of workers now being trained in the skilled crafts. ("Recruitment to Skilled Trades" by Gertrude Williams, N. Y. Humanities Press, 1957.)

These three points—the anticipated accelerated demand for skilled personnel, the unique manpower trends of this decade with an actual decline in the number of males available for the skilled trades—add up to important constraints which have to be taken into account in our efforts to elicit the numbers and kind of training of people for the crafts.

WE NOW inevitably come to the question of how the skilled worker gets to be trained. This question cannot be answered accurately at the present time since data simply are not available in this field. The skilled trades fill their demands from a variety of sources: formal and informal training in industry; vocational training at the secondary school level; training in the armed forces; and, of course, by "picking up" the trade by moving from job to job and observing skilled men perform on the job.

The key quantitative source of information in this field relates to programs involving registered apprentices. Completions in these programs are nowhere near the current or prospectively required entries into these fields. For example, calendar 1959 saw only about 32,000 completions in registered apprenticeship programs when we had about 8½ million employed craftsmen. At this rate, the number of completions are not even sufficient to replace the estimated number of skilled workers who leave their trades each year because of death or retirement.

There is, of course, a considerable range in the proportions of persons trained for the crafts through apprenticeship. Preliminary estimates prepared by BLS indicate that only a small percentage of skilled craftsmen are now being trained in ap-

(Continued on Page 28)

Which of these new technical books do you need?

☐ October publication:
AIR CONDITIONING AND HEATING PRACTICE
by Julian M. Laub
State University of New York, Agriculture and Technical Institute at Alfred
Covers the whole field—theory, practical applications, employment opportunities — in easy to follow style, using only elementary mathematics. *640 pp., $7.50 tent.*

☐ November publication:
INDUSTRIAL CALCULATING DEVICES
by Glade Wilcox and Charles H. Butler
both of Western Michigan University
Deals with the more common, less complex office calculating devices, with complete coverage on slide rules and deviation of numerical calculation. *250 pp., $5.50 tent.*

☐ January publication:
BASIC INDUSTRIAL ELECTRONIC CONTROLS
by Jacob H. Ruiter and R. Gordon Murphy
Discussed operation and functions of the many types of electronic devices—including a good general introduction to industrial electronics and automation. *325 pp., $8.50 tent.*

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The Skilled Worker

(Continued from Page 27)

prenticeship programs over-all.

Perhaps between one-fourth and one-third of our requirements are being met through all kinds of apprenticeship training in such occupations as brickmasons, electricians, plumbers and pipefitters, and tool and die makers. The proportion apparently is closer to around 10 per cent in such occupations as all-round machinists and job setters, airplane mechanics and carpenters—and is even well below that for such trades as auto mechanics, power linemen, etc.*

In a real and meaningful way, the apprenticeship programs in this country offer the broadest kind of training needed for the job world of the 1960s, and the Labor Department intends to take steps in the immediate future to move this program ahead, in cooperation with labor and management.

Apprenticeship training, however, will not fill all of our job needs in the skilled crafts. Vocational training—especially at the secondary school level—is and will be a major supplier of our needs. We can enhance these programs, too, and relate them more closely to our changing occupational and industrial structure. As the President has indicated in his message on education, this area will be receiving additional attention, too.

Industry and business, of course, also have a critical role to play here—not only in the cooperation they have given and will give to programs of vocational education and apprenticeship, but also in the very important area of on-the-job training.

AGAINST this brief background, what are the implications for education in general, for guidance and counseling in particular?

1. We have a problem of sheer numbers: As our Department has already indicated (cf. *Manpower — Challenge of the 1960s*) we are faced with the prospect of 26 million new young workers coming into the American labor force during the current decade—40 per cent more than during the 1950s. This is both a challenge and an enormous opportunity.

Should we move ahead to high levels of economic activity and employment, then we can look forward to employing all of these young persons with their talents, skills and aptitudes to a point of economic growth never before attained in this country. It should already be evident that the skilled worker is bound to play a pivotal role in this connection.

2. We have a problem of quality, too: Numbers alone will not meet the challenges of the current decade. We need quality performance and talent up and down and across the occupational structure. Two steps are needed here: *First*, to motivate our young people to endow themselves with the maximum amount of training and skill development of which they are capable. And *second*, to provide them with the means for achieving this kind of training—at all levels of the educational ladder.

3. The juxtaposition of these two factors of quantity and quality is underscored by another dimension: The problem of change, especially under the impact of automation and technological developments. The implications of technological change are enormous, not only for the current situation—they present us with some of the most intractable problems of unemployment today—but they foreshadow major problems for the immediate future as well.

Just the past dozen-odd years of the post-World War II period have seen dramatic changes where some job fields have already declined significantly, while others have taken on added importance—and still others have appeared for the first time. In the physical sciences alone we now need people in fields which were at their very genesis or completely unknown a short decade and a half ago: data telemetry, micro-miniaturization, transistorized circuitry, etc., etc.

4. Changing technology has also had important effects on many skilled occupations within the craftsmen group. Illustrative of the impact of technology are the cases of the blacksmiths, where employment fell from 230,000 a half century ago to only about 40,000 now; the glass blower (under the impact of the automatic glass blowing machine); and the hand cigar maker as well as the cooper. ■

* CF.e.g. "Apprenticeship and Training in the Contract Tool and Die Industry," Bulletin F-150, U. S. Department of Labor, Bureau of Apprenticeship and Training, November, 1959.

NATURAL SCIENCES

In the Home Economics Classroom

Home economics teachers and their pupils today must utilize the natural sciences to help create and maintain modern homes. Here are some ideas high school teachers can use to help students in their classrooms recognize the relationship of science to housing, furnishings and equipment

Aleene Cross, *Head, Home Economics Education, University of Georgia*

THAT SCIENCE has played a significant role in the development of our culture and that it will become increasingly important in our future development is obvious. Therefore, young people need to understand the dependence of our society upon scientific and technological achievement and to realize that science is a part of daily living.

Home economists have always been aware of the contributions that science has made, and is continuing to make, toward the improvement of the home. But have home economics teachers realized the role they must play if pupils are to recognize the relationship of science to home economics? Have teacher educators really prepared teachers to utilize their backgrounds in the natural sciences in teaching all areas of home economics?

The purpose of this article is to explore some ideas that could help prospective and on-the-job teachers to:

1. See the relationship of already-learned science principles and home economics principles.
2. Plan some learning experiences for pupils in the area of housing, furnishings and equipment that will incorporate and emphasize scientific principles.

How can college students and teachers in in-service groups identify principles as scientific, and see ways of giving these principles their rightful place in the teaching of high school home economics? The following ideas are not unique nor have they been tried out to any degree. This is a relatively new approach and, therefore, these ideas are merely suggestions to be used in an experimental manner. Perhaps these will stimulate the kind of creative thinking that will result in many other ideas.

The most logical place to begin seems to be with material already available, such as curriculum resource guides. Many of these have a column labeled principles, concepts, or learnings. Would it not be profitable to select out of this list of principles, those that are stated as principles of science and those that are based on scientific information?

A next step in this process might be to identify other scientific principles appropriate for the unit, and add them to the guide. Certainly if a guide does not have a list of principles, a group of pre-service students or in-service teachers might well begin by listing appropriate scientific, as well as, home economics principles.

A second idea is to use professional periodicals that contain articles and research reports for the purpose of identifying scientific principles. A recent article in "What's New in Home Economics," contained 36 science principles. This particular article may be an exception in the quantity of science principles, but it is probably typical of the quality available in most articles in this area.

A survey of high school science textbooks to discover some of the related materials should provide a means of more clearly seeing the science and home economics relationship. One general science textbook contains a unit on heat, light, and materials for building. Many of the science prin-

6 READY SOURCES FOR IDEAS

for identifying and teaching scientific principles applicable to home economics

1 Curriculum resource guides

2 Professional periodicals

3 Science textbooks

4 Home economics textbooks

5 Demonstrations

6 Science laboratory projects

Home Economics

(Continued from Page 29)

ciples listed in this unit could easily be incorporated in a home economics unit on housing. The same sort of thing could be accomplished with more advanced science books in biology, chemistry and physics.

Parallel to the use of science books, and probably more important, is the identification of related science information in our home economics high school textbooks. Putting books about that area side by side with science books cannot help but point clearly to our scientific heritage.

Demonstrations required in an equipment course or as a part of home management can be used to help students see a third dimension—college home economics subject matter as it relates to science and to high school teaching of home economics. One student could be asked to repeat her demonstration for a methods class and point up the underlying scientific principles.

A sixth suggestion is the use of selected science laboratory experiments or projects. Most home economics education majors take courses in biology, chemistry and physics. Many experiments and projects in those courses have a direct bearing on housing or equipment, but the inter-relationship must be pointed out.

Establish Goals

Both pre-service and in-service groups need not only to see the relationship of their science background to home economics but they also need help in planning experiences for high school pupils that will accomplish the same goal.

At our fingertips is much understanding about the learning process. Perhaps it will be helpful if we relate our suggested ideas for pupil experiences either to the purposiveness of learning, the complexity of learning, or the transfer of learning. Here again these ideas are merely suggestions; perhaps your own imagination will supply you with more.

All learning is purposive. What does this mean utilizing principles of science? It means, among other things, clarification of purposes, the problem approach to teaching, and experimentation by pupils. This points to teacher-pupil planning and to setting up objectives.

Suppose a homemaking teacher has as one of her own objectives to help pupils gain a better understanding of scientific principles which apply to household equipment. Then she must pre-plan in such a way that she can guide her pupils in setting up class objectives that will reflect her own objective.

An objective that usually results from teacher-pupil planning in this area, and said in "pupil language," is to learn to use and care for equipment. It would be simple for a teacher to so lead the discussion that this objective would be to understand the whys of the use and care of equipment. An objective stated in this way makes easier the planning of activities that could result in the identification by pupils of scientific principles.

Identify Principles

Learning is complex, and the learner absorbs many things at one time. Knowledge, understandings, skills and attitudes are interwoven in the learning process. What does this principle of learning mean for teaching homemaking pupils principles of science?

A homemaking teacher must first identify the principles she wants to emphasize.

Secondly, she must select experiences that will incorporate these selected principles of science. The understanding and practical application of these principles would be a part of the learning activity. The development of skills would be begun at school and continued at home. The attitude of the pupils toward the particular activity, group cooperation, home experiences, and routine duties would also be affected by this total experience.

Utilize Learning Principles

Learning will be transferred to the extent that the learner sees the possibility of transfer to other situations, has generalized from his learnings so that he understands the principles involved, and is given practice in transferring these generalized insights into new situations.

What does this principle of learning mean for teaching in such a way as to utilize the natural sciences? It means organization of lessons to take advantage of already learned science principles, verbalization of the science principles that have already been learned, and recognition of other possible situations in which these principles would apply.

The teacher's first step might be to discover which science courses the majority of her pupils have had or are enrolled in at this time. She would then get the textbooks and seek out the correlated sections. A talk with the science teachers would be helpful.

Once the home economics teacher has identified these scientific principles and the parallel learning experiences, she is ready to organize her own lessons to include some of these selected principles. A teacher must be aware that this cannot be successful unless she does this purposefully and systematically.

The process of verbalizing the science principles that have been learned and the possible situations in which these principles will apply should be an integral part of the verbalization of all learning that has taken place, and the application of this knowledge.

This verbalization can be done by the teacher's pointing out scientific principles along with home economics principles as she gives demonstrations; as she leads discussions; as the pupils use references to seek out information; really, as she teaches day by day. Future application of the principles should be done simultaneously with the recognition of the principles. A teacher must plan for this, as well as be alert to opportunities that naturally arise.

Evaluate Experiences

A second major point at which a teacher can guide pupils to verbalize the principles involved is evaluation of the learning experience. How fine it would be if every teacher took a few minutes at the end of each class period to help pupils summarize not only what they have learned, but also, how they can apply these learnings in other situations. The evidence is distinct and emphatic that the ability of a pupil to transfer a learning to other situations depends on being helped to see the possibilities of transfer.

Ellen H. Richards once said, "The well-educated young woman will blend art and science in a way we do not dream of; the science will steady the art and the art will give charm to the science." In this day of so much scientific and technological change, homemaking teachers and their pupils must utilize the natural sciences to help create and maintain liveable and lovely homes.

AVA

1961 TRADE SHOW

EXHIBITION HALL

MUNICIPAL AUDITORIUM

KANSAS CITY, MO., DEC. 5-8, 1961

Commercial exhibits will provide one of the major attractions of interest to everyone attending AVA's 55th Annual Vocational Convention. Exhibitors at more than 100 booths will display the newest teaching aids, equipment, textbooks and supplies for use in the Nation's vocation-technical and practical arts programs. Meetings and section programs are so planned that delegates can devote a full one-half day to viewing the exhibits in Kansas City's Municipal Auditorium, where the convention sessions will also be held. Get your exhibit card punched while visiting each booth to be eligible for the valuable prizes that will be distributed at the SHIP program. More than 70 exhibitors will have displays at the 1961 convention. The firms which were scheduled to have booths, by the time the Journal went to press, are listed on the following two pages.

GIVE AVA YOUR IDEAS

All AVA members attending the convention may express their views on the convention program, association activities, and the position AVA should take on certain issues. This should be done while visiting the displays in the Exhibition Hall. Voting machines will be located at Booths 115 and 116.

Following are the questions on which AVA members should be prepared to vote "Yes" or "No."

AVA CONVENTION

1. Should a banquet be provided for the convention each year?

2. Should more than one-half day be set up in the program for visits to the exhibits?

3. Do you feel that more teachers should be placed on the Divisional Programs at the convention?

LEGISLATION

1. The AVA should give active support and leadership to proposals for establishing public centers and/or agencies for training out-of-school and unemployed or underemployed youth and adults.

2. Should the AVA engage in less, the same amount, or more legislative activity?

THE ASSOCIATION

1. Has the AV JOURNAL improved in appearance and quality this year?

2. The AVA and the American Industrial Arts Association (AIAA) should merge into one organization with a single name.

VOCATIONAL PROGRAM

1. Have we been swayed too far by those who advocate vocational education be "broad" and "cultural"?

2. Has vocational education become too generally staffed and dominated by academic educators who do not understand the goals, objectives and purposes of vocational education or its methods, techniques and philosophy?

3. Have we in too many instances catered to the "college bound" group seeking prestige for ourselves and our programs while we overlook, neglect and ignore those who have to go to work for a living?

4. Are we trying to justify too much of vocational education as vocational preparation for a wide range of "related" occupations?

5. AVA should advocate a special division or type of vocational education designed to prepare relatively slow learners for employment.

AVA CONVENTION EXHIBITORS

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Sign Posts For The 60's

L. T. White emphasizes the vitality of Distribution

IT'S AN HONOR to take part in your conference. When DE supervisors and coordinators meet much good can result.

You have asked me to discuss "The Sign Posts For the 60's". There are five such significant indicators:

1. Public recognition of distribution importance.
2. Political interest in small business.
3. Financing of distribution.
4. Demand for education for enterprise.
5. Desire to build the community, the nation.

They suggest courses which distributive educators can take to advance this cause. We meet in the 22nd year of distributive education. You have brought it to its highest level in the number of programs, teachers, and enrollment. You have also brought it to the highest point of public esteem.

1. Public Recognition of Importance

This is the first sign for the 60s. This year [1960] opened with predictions of high productivity and prosperity. By the end of March, the first quarter, there were adjustments, at midyear, there was disappointment as to production employment.

In the third quarter there was amazement. With steel, for example, running at 50 per cent of capacity, national sales were within one per cent of the record.

Then economists and publishers began to acclaim the vitality of distribution. *Time* magazine in October carried a special feature, "The Service Economy—A Growth in a New Direction." They said, "Distribution is the biggest sector of the economy. Thirty-three million people are performing services against 27 million making things. In the past five years, purchases of service rose 27 per cent against G.N.P. increase of 18 per cent. As service spending increases the U. S. economy will become more stable."

Later in October, *Business Week* wrote about "Distributive-Service Businesses — The Unknown Half of the Economy."

"The rise of distributive service occupations results in an advance of civilization and wealth." This table records the progress over 140 years.

Year	1820	1870	1920	1956	1960
Per cent Engaged in Distributive Services	15%	23%	36%	52%	60% (Est.)

In December, the *Duns Review* magazine editorial was "Trade—The Willing Servant." It said, "Trade can help man conquer himself. All physical conquests are of secondary importance unless human values have priority. In trade, man shows a net gain as a thinking creature with a sense of responsibility to his fellow man."

Trade was an early word for marketing or selling. Later it became Commerce. That brings us to signs which indicate the U. S. Department of Commerce intends to help lift distribution, to more than compile and publish statistics.

A comparison with other nations often shows the real value of distribution to the U. S. A study as to why India hasn't moved forwards says this:

"Their greatest waste, however, comes from the failure of marketing to furnish the force necessary to start the economy on a period of growth."

The article described primitive marketing by telling of a dealer who deals in utensils. He buys a crate of pots and pans. He prices them at cost. He lives off the crates. There is no profit or progress in such backward marketing.

In its role of lifter, the U. S. Department of Commerce published this year, "The Importance of Education For Distribution." They were impressed when 35,000 copies were taken quickly. They saw it filled a great need and hunger. It was timely.

DE coordinators and supervisors made swift use of this statement. Now, a second printing has been made and a fresh supply is ready.

Each DE coordinator should request enough copies to give one to the head of every distributive enterprise in his community.

L. T. White
Devoted DE Supporter

In November, the new book, "The Distribution Revolution" by Walter Hoving of Tiffany & Co., was published. Thousands have been bought. Again the response surprised the publisher and the author.

Last Monday, I told Mr. Hoving, that I would talk to you DE people today. He said, "The word, 'Distribution' is better known today than ever before."

I helped him understand why. DE coordinators for 20 years, in 1,000 communities, in 50 states, have been "talking up" distribution. You have defined it. You have described what it does. You have sold it to school boards, principals, fellow teachers, parents, and students—even men engaged in distribution.

Once in preparing to talk to the Sales Executive Club in North Carolina, I was asked by the chairman, "What do you mean by DE?" When I described distribution and its educational processes he said, "Gosh, I'm in Distribution, an appliance wholesaler. I'm going to tell my wife. She'll be proud."

You have made the word Distribution mean good to millions. You have made it honorable to those who distribute goods and services.

Now is the time to rally those in your town to the banner of distribution. Distribution is bigger than retailing. Here's a quick list of such allies back home. You should know them. They should know you.

- ► Manufacturers—sales and advertising executives.
- ► Transportation companies—customer relations men.
- ► Communication—newspapers, TV, radio, advertising managers.
- ► Public utilities—new business managers.
- ► Wholesalers—presidents or proprietors.
- ► Bankers—public relations, officers, new businessmen.
- ► Insurance—agency heads.
- ► Real Estate—presidents or proprietors.
- ► Service trades—association secretaries.
- ► Advertising agencies—presidents or proprietors.
- ► Contractors—president or proprietor.
- ► Professional—C.P.A.'s, lawyers, engineers.

Here's a practical method of enlisting their support. Compile a list of such leaders of distribution. Look in the yellow pages of the telephone book, or the roster of the Chamber of Commerce. Reach them by phone. Ask for a "man in charge of distribution." This makes the telephone operator aware of the word. When she understands she'll connect you with the right man.

Open the conversation by saying, "Your company distributes ——?——. I teach distributive education in the high school."

You might ask, "Do you think selling on the local level could be better?"

"Do you think managing could be smarter?"

Nine times out of ten you'll get a loud and quick "yes."

Soon you'll have established there is a need for distributive education and a value to each company and the whole town.

You should add two names to this list every day. You should have one hundred at the end of two months. Then you'll have strong support.

2. Political Interest in Small Business

This is the second sign for the 60's. Small business has become a very interesting subject to legislators. Here are facts which relate DE to small business:

Most small businesses are in distribution.

Most businesses around your school are small businesses.

Continued on Page 36

EDITOR'S NOTE

The Journal reprints on these pages an address which L. T. White delivered to a small group of teacher-coordinators and supervisors of distributive education at the College of Education, Temple University, last December. While this talk was made some months ago, it is reproduced here because of its splendid content which makes it of interest to all AVA members associated with distributive education.
A long-time devoted supporter of distributive education, Mr. White served as the Director of Business Research, Cities Service Petroleum, Inc., prior to his recent retirement Oct. 1, 1961. His home address is, 2601 Woodley Place, N.W., Washington, D. C.

Most employers of DE students are small businessmen. Small business needs your help.

You can win the favor of small businessmen. How? You should become a management consultant.

Business Week has said, "That only 12 per cent of the managers know what they are doing."

The first phase of management consulting is the appraisal.

The DE people of Temple University made a great contribution to management appraisal in 1958. Ten DE in-service and 30 "pre-service" teachers lead the project. They worked through student parents and friends. They conducted a survey which reached 19,000 people.

As a result of this fast and yet careful survey, DE coordinators can quickly and honestly tell which business is well managed.

The small businessman should be *helpful* to his customers. He should be *generous* to his employes. *Enterprising* to his suppliers. *Farsighted* to his bankers and *rich* to the public.

By asking these different classes of people what they think of any businessman, you will have reasons why he needs your service. You can help him correct faults and weaknesses by attending small business management courses. You will be able to attract enrollment to your adult programs.

The U. S. Small Business Administration is ready to help you in the management field. You can distribute SBA's aids and booklets. You can obtain and distribute their new management research reports.

3. Financing of Distribution

Depressions result from excess productive capacity. Idle capacity results from the inability to raise capital for sales people for training, advertising—the intangibles. We are approaching the day when merchants will be able to say, "I can finance trainees and training programs."

You can read up on this subject by writing the U. S. Chamber of Commerce, R. C. Davis, Washington, D. C. Request a copy of the "Value Added By Distribution." This will make the U. S. Chamber well inclined to DE.

We are living in an age of credit. See how these distributive inventions have advanced employment and prosperity.

1920—Financing Display Inventories. "Floor Planning" of automobiles, appliances.

1930—Financing Consumer Purchases. Credit unions, personal loan companies.

1945—Financing "Accounts Receivable"—Commercial financiers.

1950—SBA Term Loans—Participating Loans with banks.

1958-60—SBIC—Makes long term and equity capital available.

Here are ways in which you can advance investments in distribution.

Assemble examples which prove that the money spent in trainees adds profits. Your students free the boss to do more important things. They perform the nice little things that make the difference between good and bad service. They enable something extra to be given to the customer.

If you will gather such evidence you will soon be able to show that $1 paid to a sales trainee brings $2 of profits.

Then gather examples of how education for the businessman himself pays.

Gradually, you will create understanding that the payroll makes the profit. They tell about a DE student in a service station in Illinois. He asked the dealer how many customers he had. The dealer didn't know. The boy said, "I'll make a list of them. Name, address, and phone number. Then we'll find out what they like." The dealer now says, "This DE student was worth thousands of dollars to me."

4. Demand for Education for Enterprise

Educationers are surprised and hurt when the public votes "no" on school budgets or bond issues. Why has the public become wary of educational expenditures? The reason is this. Higher education exports those who are educated.

What the businessman and taxpayer wants is educational services to expand and strengthen the local community. They want more employes, owners, proprietors, for the locality.

This state, your town is made up of people of which one of each five must head an enterprise. He must take risks with confidence because he understands how sales and profits are made.

Here's something you might consider. Form an "Institute For Local Enterprise". Suggest to those interested in local business, the men who run stations, newspapers, TV and radio, banks, etc., that community growth begins at home.

If you like we'll send you "Education For Enterprise," by C. S. Mitchell at the North Carolina State University at Raleigh. It made an impression on the next Secretary of Commerce of the U. S.

5. Desire to Build the Community

This is the fifth sign for the 60s.

There are about 100 communities in distress. They want to relieve unemployment. In any of these cities a person could ask the "Director of the Employment Service," "How many are unemployed?" He would learn there are thousands unemployed.

Then he could ask, "Are there openings for salesmen?" There are always openings for salesmen. There never has been a town or a time in which there was no need for more salesmen.

Ask the employment service people, "Why don't you teach the unemployed to sell?" They will ask you the question, "Who will do it?"

That is what you want him to ask. So you tell him "Distributive Education." When he asks, "What's that?", we are back to where we began. You can tell him.

Every community wants new industries. They say there are three thousand development committees each seeking

to take a company or concern and move it to their town. This is described as "The Great Payroll Robbery of 1960."

A concern which is being sought is bewildered by many offers. One man was trying to decide where to move his factory. A friend asked him these questions. "How would you like to move to a city where the public have learned—

What it takes to sell products.
That the consumer sets the wage rate.
What management does.
How capital is raised.

The head of the factory would ask, "What's the name of that place?" You say "Pennsylvania." He would say to you, "That's heaven!"

We have covered many things in the past hour. They have been intended to give you a new sense of significance and a renewed purpose.

You'll find encouragement and vitality with you all the time if you'll borrow or buy these inexpensive books.

► "Distribution Data Guide"—U. S. Department of Commerce.

► "The Distribution Revolution"—Walter Hoving—Ashburne.

► "No Sale—No Jobs"—Heron—Harper Bros.

► "Practice of Management"—Peter Drucker—Harper Bros.

► "The Standards We Raise"—Paul Mazor—Harper Bros.

Each of the authors agrees with you. Civilizations just don't rise, they are talked up by people like you! ■

RESEARCH

RESEARCH IN INDUSTRIAL EDUCATION, SUMMARIES OF STUDIES, 1956-59.

Research Committee of the National Association of Industrial Teacher Educators, Dr. Walter C. Brown, University of Missouri, Chairman; and Dr. Merle E. Strong, Specialist, Teacher Training Service Studies, Division of Vocational Education, U. S. Office of Education.

Although this publication is a continuation of an earlier series covering 1930-1955, it contains, in addition, a greatly improved index to the earlier publications. This volume continues the excellent annotations of doctoral, master's, and staff studies, and for the first time, makes the staff studies easy to find.

It includes 433 studies for the four-year period. A comparison of studies annotated in this volume with studies appearing in the earlier volume shows beyond doubt that the general quality has improved markedly.—*Rupert N. Evans.*

NEW BOOKS!

FACTS ABOUT MERCHANDISE
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This authoritative text provides up-to-the-minute information on the most important products sold in today's market. The scope of this book will appeal to all merchandising teachers—and home economics teachers will find it invaluable.

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Educating Students

(Continued from Page 19)

from little to a prolonged period, with most jobs in the former category.

The developing industrial eras initiated diverse trends. Scientific management and research increased the need for management specialists possessing longer preparation and greater mastery of specific management techniques. Research men, technicians, and professionals of different levels of responsibility are required in greater numbers. Schooling of varying lengths became a necessary introduction to active employment for larger numbers of people.

Our current age, ushered in by the automated processes particularly the computer and the servomechanism, has created a new type of production worker for whom we have to provide new schooling and a new curriculum. He is the automated machine operator and auxiliary controller. In his case, the amount of physical work and manual skills have been reduced considerably below that required of the mass production worker.

Responsibilities Increased

What is significant is that his responsibility has been increased. He is either individually or as a member of a team accountable for a complete stage of manufacture. His major advance is in the use of conceptual skills. While the machine is more self-regulating, he has to be especially alert to understand its operations. His primary task is to espy impending breakdowns from causes not previously identified or allowed for. Secondly, he must make the fine adjustments for continuing optimum performance.

The importance of the conceptual skills is rising constantly. The operator must be able to sense and perceive disorder, whether by sight, sound, smell, touch, feel, taste, or kinasesthetic senses. He must be able to discriminate between those signs which indicate loss of efficiency and those which may be taken as normal. He has to relate his sensory information to his mental picture of what is happening.

To utilize these sensory stimulii, the operator must have knowledge of his work, such as the general machine layout, the processes, knowledge of the technology, the control systems, display instruments, routines, and the signs of the breakdown and reduced efficiency. These he must relate to the actual practice.

Most significantly, he must decide on whether there is or will be a failure in operation and the action to be taken. Moreover, the consequences of slightly incorrect decisions tend to be far-reaching in terms of both time and money. Finally, the machine operator is usually part of a group and must maintain good working relationships with it.

The training required of this new automation operator is in many respects, quite different from that of the mass production worker. The specific skills are not the point of special emphasis. The man being prepared for this newer employment must be able to be trained easily and readily for the new higher order of responsibility and conceptual skills. The accent is not on the manual but on conceptual and thought processes.

A high level of technological knowledge will prepare him admirably for the variety of jobs he may have to hold. Generalized technical education at the high school level will be most useful for this purpose. In addition, the person must acquire a high sense of individual concern for the discharge of his responsibilities.

The maintenance men in this new era will also possess more intensive knowledge about the tools, materials, and technical processes. Many innovations will be commonplace and the maintenance man will have to master them as they appear. The areas of pneumatics, hydraulics, and electronics will play an increasingly more important role in the technology of the future.

Maintenance men must be prepared for them. The most expansive area among these jobs at the present time is the instrument mechanic who is being advanced from the lower ranks.

Another trend which will be accentuated is toward the all-around maintenance man who will be able to perform a wider variety of craft work than is now customary in industry.

The present craft jurisdictions have grown up for a number of reasons. One, it was cheaper for management to have specialists; secondly, the school systems do not provide all-around mechanics; and thirdly, the craft unions favored this system. However, management is now proposing to have new, all-around maintenance mechanic classifications with higher wage rates, because they find that they perform with more responsibility and economy.

Training Needs

VOCATIONAL TRAINING can no longer be directed merely toward preparing the individual for an immediate specific job. These are transitory. If they persist, they remain in name only. Their requirements will increase. There will be many simple jobs but these will be on the fringe of our economy and they will be constantly upgraded.

As a people, we cannot suffer underutilizing humans. The investment in capital, training, and social capital structure and services is too large for individuals not to be employed to the maximum of their capacity.

The extension of the life span will also demand an increase in the work life span. Our present experience indicates clearly that individuals must shift their employments as technology changes and our economy moves to newer products and services. Moreover, the decline of older industries will disgorge hundreds of thousands of individuals who must find newer employments. The markedly higher rate of geographical movement of industry will also have a similar effect.

Together, these and other trends will underscore the need of preparing young people not merely for a specific range of employments, but also far a whole lifetime of changing jobs and occupations.

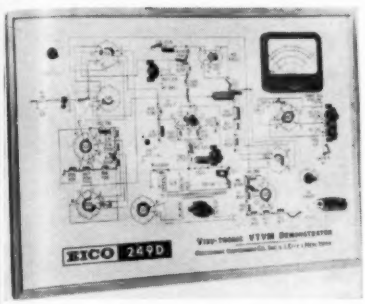
Schooling Facilities

THE EDUCATIONAL goals are to prepare the young people for a lifetime of adjustment, and to increase their capacity for "conceptualization" and the assumption of responsibility. They must acquire the skills of learning for the acquisition of newer knowledge. Teaching methods must be adapted to the learning processes of the adult who builds on past knowledge rather than through direct instruction as the young person does.

The area of greatest concern must be the vocational and industrial arts sections of our secondary school system. In them, the curriculum and the contents of study must be adapted to the newer needs of industry. The graduate must be a person who feels qualified for the newer jobs and a lifetime of continuing learning.

TRADE TALK

EICO Offers New Aid For Electronics Teaching

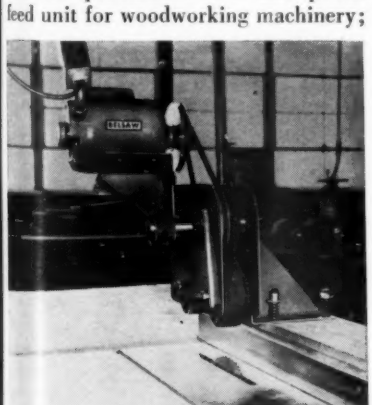


The manufacturer claims this new "Visutronic" VTVM Demonstrator No. 249D enables the teacher to demonstrate dramatically the principles of electronics employed in the VTVM and speed the students' understanding of theory, practice, schematics and symbols. The No. 249D includes a complete schematic of EICO's Model 249 VTVM, silk-screened on a durable board 27¾" high x 40¾" wide, plus all parts needed to build a complete, working EICO Model 249.

Components snap in and out quickly with the spring-type clips incorporated in the board enabling the teacher to remove components or substitute components of different values. Seventeen parts of the circuit can be disabled to help teach troubleshooting and illustrate basic principles of electronics. Electronic Instrument Co., 3300 Northern Blvd., Long Island City 1, N. Y.

Removes Risk in Feeding Woodworking Machinery

The Belsaw Machinery Co. has announced production of a new power feed unit for woodworking machinery;



radial arm, bench or band saws, jointers, shapers and sanders. The Feeder takes the hazards out of hand feeding by making the equipment completely self-power fed.

Powered by a ½ h.p. motor with a reversing switch, the unit provides for quick height and pressure adjustments for type and thickness of stock. It weighs 80 pounds and is offered on a 30-day free trial basis. Belsaw Machinery Co., 800 PF Field Bldg., Kansas City 11, Mo.

Communications System With Emergency Warning

A new series of transistorized school communications systems, incorporating a unique emergency system, has been announced by General Dynamics/Electronics. Several models, which meet the needs of different school size and layout, make provision for more complete audio programming, including a wide choice of telephone and

voice communications, classroom programming, and time signalling.

The new series also incorporates an emergency warning system which is designed to meet the requirements of Civil Defense emergency communications. In the event of power failure, the entire system converts to battery operation as easily as a portable radio. General Dynamics/Electronics, Rochester, N. Y.

Space Map Offered Free

Teachers may obtain a free copy of the latest edition of the "Rand McNally Universal Map of Outer Space" by writing Griffin Shoe Polish, Boyle-Mid-Way, 22 E. 40th St., New York, N. Y.

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Give The UNITED Way

Power Tool Progress Boosts Vocational School Enrollment

(The SHIP is the social division of the Educational Exhibitors Association. For the past 38 years it has been active in supporting all phases of vocational, technological and practical arts education.)

The growth and development of the vocational school in America has been one of the phenomena of recent years. There are well over 5,000,000 pupils enrolled in industrial-education courses (public and private). Contrast that with the year 1949, when the total was less than 3,000,000, and the figures are impressive indeed. Today there are also 35,000 to 40,000 vocational school instructors teaching young men courses in auto shop, crafts, drafting, electrical and graphic arts, metal shop and machine shop, and woodworking. More than 10,000 instructors are teaching woodworking alone!

Reasons for this tremendous growth are many and varied, not the least important being the progress and development of power tools in the machine tool industry. The power tool—with its great speed, its tremendous efficiency, and the endless variety of products it can fashion—holds a far greater fascination for young men than did the old-fashioned hand tool. New power tools stimulate the imagination of the young, quicken their interest in vocational courses, give vocational schools an added "glamour" they never before possessed. This interest in power tools also gives additional responsibility to the power tool manufacturer—responsibility for maintaining and stimulating the interest of the young by improving the caliber, speed, and efficiency of their products.

It has also been necessary, of course, to increase the safety of power tools. Many of the safety features incorporated in today's power tools are direct results of the needs and demands of the educational field. An experienced, adult worker operating a power tool in an industrial plant for six or seven hours a day, while working on a single specific operation, requires one kind of safety standard. An inexperienced student—or group of students—operating a power tool in a school shop, while working on a number of different projects, requires quite another kind of safety standard. Consequently, today's power tools incorporate such safety features as totally enclosed cabinet bases for all bench-mounted machines in both metal and woodworking fields; pulleys and V belts that are no longer exposed or semi-exposed; and guards on all possible moving parts.

Another development in the power tool has been rigidity. Prior to 1950, many working parts on a machine tool were made of die cast material. Today, most of these same parts are made of more durable material such as nylon, steel, or aluminum. This trend toward more rigid and durable material has also been a direct result of the needs and demands of the educational field. Invariably, in discussing a new power tool with an educator, a representative of the tool industry will be asked, "Is it boy-proof?" The need to make today's power tools "boy-proof" has resulted in a basic philosophy for today's power tool manufacturer: to make power tools as low in cost as possible, while still maintaining the highest standards in workmanship and materials. This philosophy has resulted in power tools that are rigid, durable, and really able to stand up under the wear and tear they are subjected to by inexperienced hands.

As stated earlier, along with safety and rigidity, power tools have also tremendously increased their versatility and efficiency. Each day sees some power tool on the market that will accomplish new miracles. Recently, for example, such tools as the radial arm saw, variable speed drill press, variable speed woodworking lathe, as well as portable and built-in type dust collectors, have made their appearance.

The progress and development of the power tool has been so swift and so dramatic in recent years that it is difficult to predict what will happen in the future. As the interest of young men in vocational schools increases, so will the development of the power tool keep pace.

—Gene Bellezzo, Duro Metal Products Co.

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